"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

L 24248-66 EWT(d)/EWT(l)/EXP(m)/EWT(m)/EWA(d)/T/EWA(l) IJP(c) WW/GS/RM

ACC NR: AT6006919 SOURCE CODE: UR/0000/65/000/000/0328/0350 54

AUTHOR: Ginzburg, I. P. (Professor); Kocheryzhenkov, G. V. 84

ORG: Scientific Research Institute for Mathematics and Mechanics of the Leningrad State University (Nauchno-issledovatel'skiy institut matematiki i mekhaniki Leningradskogo gosudarstvennogo universiteta)

TITLE: The turbulent boundary layer on a porous curvilinear surface

SOURCE: Teplo- i massoperenos. t. II: Teplo- i massoperenos pri vzaimodeystvii tel s potokami zhidkostey i gazov (Heat and mass transfer. v. 2: Heat and mass transfer in the interaction of bodies with liquid and gas flows). Minsk, Nauka i tekhnika, 1965, 328-350

TOPIC TAGS: turbulent boundary layer, laminar flow

ABSTRACT: The article is a mathematical consideration of the case of a binary mixture in which there are no chemical reactions between the components. A relationship is sought between the total heat content, H, and the relative mass concentration of the substance introduced, ξ_1, and the velocity v_x, in the form of polynomials of the second degree:

$$H = A_0 + A_1 v_x + A_2 v_x^2; \quad (1)$$

$$\xi_1 = a_0 + a_1 v_x + a_2 v_x^2 \quad (2)$$

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

L 24248-66
ACC NR: AT6006919

in the turbulent core ($y \geqslant \delta_l$) and

$$H = B_0 + B_1 v_z + B_2 v_z^2; \quad (3)$$

$$\xi_1 = \beta_0 + \beta_1 v_z + \beta_2 v_z^2 \quad (4)$$

in the laminar sublayer ($y = \delta_l$); here, δ_l is the thickness of the laminar sublayer. Using the above conditions for H and ξ_1 at the wall ($y = 0$), at the limit of the boundary layer ($y = \delta$), and at the limit of the laminar sublayer ($y = \delta_l$). Using the energy and diffusion equations for determination of the coefficients, the article sets up and solves a system of equations for the case under consideration.

SUB CODE: 20/ SUBM DATE: 09Nov65/ ORIG REF: 009

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHENKO, I. Ye.

"Rooting of Woody Cuttings as Dependent Upon Photoperiodic Condition," Dokl. Ak. Nauk SSSR, 24, No. 4, 1939.

All-Union Inst. of Plant Industry im. Pushkin.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHENKO, I. YE. FX 11/4974

USSR/Agronomy Jul 48
Plants - Growth Regulators

"Controlling the Development of the Lemon Tree With the Aid of Growth Substances," N. G. Kholodnyy, Active Mem, Acad Sci USSR, I. Ye. Kocherzhenko, Sochi Experimental Sta for Southern Fruit and Subtropical Plants, 4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 2

Reports experiments to determine effect of α(-naphthylacetic acid on the lemon tree. Preparation was applied in various ways with favorable results. Includes photographs. Submitted 12 Apr 48.

[redacted] 11/4974

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHENKO, I. Ye.

USSR/Cultivated Plants - Subtropical. Tropical. M.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44357

Author : Kocherzhenko, I.Ye., Dryzgalov, K.A.

Inst : All-Union Scientific Research Institute for Tea and Subtropical Cultures.

Title : On the Premature Dropping Off of the Leaves in Lemon in Winter Under Room Conditions and in the Lemonarium.

Orig Pub : Byul Vses. n.-i. in-ta chayn i subtrop. kul'tur, 1957, No 1, 142-156.

Abstract : In order to determine the causes of premature leaf drop in the citrus fruit grown in the enclosed and semi-enclosed ground, the Botanical Garden of the Academy of Sciences of USSR (Kiev) initiated a series of experiments on the study of the effect of hydrothermic and light conditions on the degree of leaf drop in lemons when kept in

Card 1/3 * Cand Biol Sci

USSR/Cultivated Plants - Subtropical. Tropical. M.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 44357

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

winter in lemonarium and in centrally heated rooms with different degrees of lighting. The studies under room conditions were carried out on the pot cultures of cuttings grafted on the tri-foliate and on the seedlings of the Meyer and Novogruzinski lemon. In the lemonarium the experiments were conducted on the varieties Lisbon, Villafrank, Kuzner, Donnua, Sochinsky Genoa and Pondorosa. The casting off of the leaves by the lemon in winter under room conditions is produced by the plants light starvation and by an abrupt change in the conditions (the transfer from the hothouse into the room). The more light and the higher the moisture content in the air in the building in winter the smaller the loss of the leaves. In maintaining the lemon in hothouses, greenhouses or lemonariums the penetration of smoke into the building has an extremely harmful effect since it produces a mass dropping off of the leaves especially with the high

Card 2/3

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHENKO, I.Ye. [Kocherzhenko, I.IE.]

Speeding up the generative development of tree seedlings. Trudy Bot. sada AN URSR 7:12-29 '60. (MIRA 14:4)
(Trees) (Growth (Plants))

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

10 1300 1327

29027
S/043/61/000/004/005/008
D274/D502

AUTHORS: Ginzburg, I.P., and Kocheryzhenkov, G.V.

TITLE: Turbulent boundary layer of heat-insulated airfoil or axisymmetric body

PERIODICAL: Leningrad. Universitet. Vestnik. Seriya matematiki, mekhaniki i astronomii, no. 4, 1961, 115 - 121

TEXT: The problem of gas flow in a turbulent boundary layer is solved by assuming Pr = 1. Velocity profile: It is assumed that the friction stress in the boundary layer can be expressed by

$$\tau = \tau_w \left\{ \left[1 - \left(\frac{y}{\delta}\right)^2 \right] + \omega \left[\left(\frac{y}{\delta}\right) - \left(\frac{y}{\delta}\right)^2 \right] \right\}, \qquad (1.1)$$

where τ_w is the shear stress at the wall, δ - the thickness of the boundary layer and y the distance from the wall;

$$\omega = \frac{\delta}{\tau_w} \frac{dp}{dx};$$

Card 1/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Turbulent boundary layer of ...

the gas is ideal; equation

$$\frac{T}{m} = c_1 h + d \qquad (1.3)$$

holds. Hence

$$\frac{\rho}{\rho_w} = \frac{c_1 H_w + d}{c_1 h + d} = \frac{H_w + \frac{d}{c_1}}{H_w + \frac{d}{c_1} - A\frac{v_x^2}{2}}, \qquad (1.5)$$

where H_w is the heat content of unit mass outside the boundary layer. The equations of semi-empirical turbulence theory are used (in conjunction with Eqs. (1.1) and (1.5)) for obtaining the equation for the velocity profile in the turbulent boundary layer, viz.

$$\frac{\tau_w}{\rho_w} \frac{1 + \varkappa\left(\frac{y}{\delta}\right) - (1+\varkappa)\left(\frac{y}{\delta}\right)^2}{k^2 y^2} = \frac{H_w + \frac{d}{c_1}}{H_w + \frac{d}{c_1} - A\frac{v_x^2}{2}} \left(\frac{\partial v_x}{\partial y}\right)^2.$$

Card 2/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Turbulent boundary layer of ...

The presence of a laminar sublayer is assumed. There one can approximately set:

$$v_x = \frac{\tau_w}{\mu_w} y + \frac{1}{\mu_w} \frac{dp}{dx} \frac{y^2}{2} . \qquad (1.7)$$

The velocity at the boundary of the laminar sublayer is

$$u_l = \frac{\tau_w}{\mu_w} \delta_l + \frac{1}{\mu_w} \frac{dp}{dx} \frac{\delta_l^2}{2} = \delta_l \frac{\tau_w}{\mu_w} \left(1 + \frac{\omega_l}{2}\right) = \frac{k_1}{k} \frac{\nu_w}{v_*} \frac{1 + \frac{\omega_l}{2}}{\sqrt{1 + \omega}} \frac{\tau_w}{\mu_w} \approx \qquad (19)$$

$$\approx \frac{k_1}{k} v_* = \frac{k_1}{k} \frac{u}{\zeta}, \text{ where } v_* = \sqrt{\frac{\tau_w}{\rho_w}} , \ \zeta = \frac{v}{v_*} .$$

The derivation is examined of relationship between τ_w and δ^{**}. By expansion in series (of arc sin $k_1/k \ \bar{u}/\zeta$) one obtains from

$$\frac{k}{\bar{u}} \left[\arcsin \frac{k_1}{k} \frac{\bar{u}}{\zeta} - \arcsin \bar{u}\right] = \ln\left(\frac{k_1}{k} \cdot \frac{\delta}{\delta^{**}} \frac{\nu_w}{\mu_w} \zeta \frac{1}{\sqrt{1 + \omega_l}}\right) - \frac{\delta^{**}}{\delta} .$$

Card 3/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Turbulent boundary layer of ...

equation

$$\frac{u\delta}{\nu_w} = D\frac{k_1}{k}\frac{\xi}{\sqrt{1+\omega_\ell}}\, e^{\frac{k\xi}{\bar{u}}\arcsin\bar{u}}, \quad \text{where } D = \frac{1}{2}\, e^{1-k_1-\frac{\omega}{2}}. \qquad (2.1)$$

In order to find the friction resistance of an airfoil, a second equation between δ and τ_w is required. This can be obtained from the law of conservation of momentum. For using it, one has to know the thickness δ^{**} of lost momentum and the thickness δ^{*} of displacement. If, in their computation, the velocity profile in the boundary layer is assumed to be that of a plate, one obtains the appropriate expressions

$$\frac{\delta^{**}}{\delta} = \int_0^1 \frac{\rho}{\rho_\infty}\frac{v_x}{u}\left(1-\frac{v_x}{u}\right)d\frac{y}{\delta} = \frac{\tau_w}{\rho_\infty}I, \qquad (22)$$

where $(\bar{H}_w = 1)$

$$I = \frac{1}{K}\frac{1}{\sqrt{1-\bar{u}^2}} - \frac{1}{(K)^3}\frac{2+\bar{u}^2}{1-\bar{u}^2} + \frac{1}{(K)^5}\frac{\bar{u}^2(\bar{u}^2+2)}{(1-\bar{u}^2)^{1.5}} + \cdots$$

$$\frac{\tau_w}{\rho_\infty} = 1-\bar{u}^2$$

Card 4/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Turbulent boundary layer of ...

and $$\frac{\delta^*}{\delta^{**}} = \frac{1+\bar{u}^2}{1-\bar{u}^2} + \frac{1}{k\zeta}\frac{1}{\sqrt{1-\bar{u}^2}} + \ldots \qquad (2.3)$$

If the influence of the longitudinal pressure gradient is taken into account, then

$$\frac{d\delta^{**}}{dx} = \frac{\rho_w}{\rho_0}\frac{a_1}{v_0}\frac{k(\bar{u})}{K}\frac{1}{\sqrt{1-\bar{u}^2}} - \frac{\rho_w}{\rho_0}D\frac{k_1}{k^2}k(\bar{u})\frac{e^{\frac{K}{a}\arcsin\bar{u}}}{\sqrt{1+\bar{u}}\sqrt{1-\bar{u}^2}}. \qquad (2.6)$$

where $$\bar{u} = \frac{u}{\sqrt{\frac{2\left(H_0+\frac{d}{c_1}\right)}{\lambda}}}, \quad H_w = H_0.$$

Determination of friction law: In order to find the friction law, i.e. the dependence of ζ on x, the equation

$$\frac{1}{r^\varepsilon}\frac{d}{dx}\left(r^\varepsilon \rho_0 u^2 \delta^{**}\right) + \rho_0 u \frac{du}{dx}\delta^* = \tau_w \qquad (3.1)$$

Card 5/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

is used which expresses the momentum law; $\varepsilon = 0$ for an airfoil and $\varepsilon = 1$ for an axisymmetric body. One obtains

$$\frac{d}{dx}\left(\frac{\rho_2}{\rho_\infty}\frac{\delta^{**}v_\infty}{v_\infty}\right)+\frac{u'}{u}\frac{\rho_2}{\rho_\infty}\frac{\delta^{**}v_\infty}{v_\infty}\left(1+\frac{\delta^{*}}{\delta^{**}}+\frac{\varepsilon}{r'}\frac{dr'}{dx}\right)=\frac{c_f}{2}\frac{1}{v_\infty}\frac{\rho_w}{\rho_\infty}. \qquad (3.2)$$

where

$$\frac{\rho_2}{\rho_\infty}\frac{\delta^{**}v_\infty}{v_\infty}=\frac{\rho_2}{\rho_\infty}R^{**}$$

This equation is solved by the method of successive approximation. Setting

$$D\frac{k_1}{k^2}\frac{1}{\sqrt{1-\bar{u}^2}}=f_1(x),\quad \frac{k}{\bar{u}}\arcsin\bar{u}=f_2(x),$$

one obtains

$$\ln\frac{\rho_0}{\rho_\infty}R^{**}=\ln f_1(x)+\zeta f_2(x). \qquad (3.3)$$

For the determination of $Z = \rho_0/\rho_\infty\ R^{**}$, one obtains

Card 6/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Turbulent boundary layer of ...

$$Z^{n_2-1}\frac{dZ}{dx}+\frac{u'}{u}Z^{n_2}\left(1+\frac{\delta^*}{\delta^{**}}+\frac{u}{u'}\frac{d\ln r'}{dx}\right)=\frac{F_2(x)}{n_2}. \qquad (3.4)$$

where $F_2(x)=n_2\frac{u}{v_\infty}\int_0^x f_1^{n_1-1}f_2^{n_2}e^{-n_1\frac{\delta^*}{\delta^{**}}}dx.$

If δ^*/δ^{**} is considered as a known function of x, then Eq. (3.4) is a linear differential equation whose solution is

$$Z^{n_2}=e^{-\int P_1(x)dx}\left(C+\int_0^x F_2(x)e^{\int P_1(x)dx}dx\right). \qquad (3.5)$$

In the case of a plate ($\bar{u}'=0$), one obtains for the friction coefficient

$$C_f=2\frac{\delta^{**}_{x=l}}{l}=\frac{2}{l}\frac{\nu_\infty}{u}Z_l\frac{\rho_\infty}{\rho_0}=$$

$$=2k^{\frac{2}{n_2}}e^{-\frac{n_1}{n_2}}\left(\frac{ul}{\nu_0}\right)^{\frac{1-n_2}{n_2}}\left(\frac{\arcsin\bar{u}}{\bar{u}}\right)^{\frac{2}{n_2}}(1-\bar{u}^2)^{\frac{1-n_2}{2n_2}}\left(D\frac{h_1}{h_2}\right)^{\frac{n_2-1}{n_2}}n_2^{\frac{1}{n_2}}\left(\frac{\rho_\infty}{\rho_0}\right)^{\frac{n_2-1}{n_2}}\left(\frac{\rho_\infty}{\rho_0}\right)^{\frac{1}{n_2}}. \qquad (3.6)$$

Card 7/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

29027
S/043/61/000/004/005/008
D274/D302

Turbulent boundary layer of ...

If $\mu_0/\mu_w = h_0/H_w^h$, then

$$C_f = 2k^{\frac{2}{n_1}} e^{-\frac{2}{n_1}} \left(\frac{\nu l}{v_0}\right)^{\frac{1-n_1}{n_1}} \left(D\frac{h}{H}\right)^{1-\frac{1}{n_1}} \left(\frac{\arcsin \bar{u}}{\bar{u}}\right)^{\frac{2}{n_1}} (1-\bar{u}^2)^{\frac{2}{\mu_1}-\frac{1}{2}} \bar{u}^{\frac{2n_1-1}{n_1}} \frac{1}{n_1^{n_1}}. \quad (3.7)$$

There are 3 Soviet-bloc references.

Card 8/8

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

GINZBURG, I.P.; KOCHERYZHENKOV, G.V.

Turbulent boundary layer of a thermally insulated wing or axisymmetrical body. Vest.LGU 16 no.19:115-121 '61. (MIRA 14:10)
(Aerodynamics)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR/Electronics - Antennas

FD-528

Card 1/1 : Pub. 90-4/13

Author : Kocherzhevskiy, G. N., Active Member, VNORiE

Title : Directional diagrams of angular slot antennas

Periodical : Radiotekhnika 9, 33-37, May/Jun 1954

Abstract : Discusses experimental directional diagrams of angular slot antennas, gives an approximation method of calculation, and compares calculated and experimental diagrams. Three references: 2 USSR, 1 USA.

Institution : All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov (VNORiE)

Submitted : November 25, 1952

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

VOCHENZOV, V. M.

"Radiation of Vibrators Located Close to Metal Surfaces." Cand(Tech) Sci, Moscow Power Engineering Inst 1 and V.M. Molotov, (No date Indic). (Radiotekh, Apr 55)

SO: Sum.No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR/Radiophysics - Superhigh Frequencies, I-11

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 35459

Author: Kocherzhevskiy, G. N.

Institution: None

Title: Radiation from a Slit Cut in an Ideally Conducting Round Disk

Original Periodical: Radiotekhnika, 1955, 10, No 4, 48-55

Abstract: Rigorous equations are derived for the directivity patterns of a slit cut in a round disk of finite dimensions. The directivity patterns are calculated in the equatorial and in the meridial planes of an elementary slit cut in the center of the disk.

Card 1/1

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR/Electronics - Antennas FD-2443

Card 1/1 Pub 90-5/11

Author : Kochershevskiy, G. N., Active Member VNORiE

Title : Radiation from a slot cut in an ideally conducting round disk

Periodical : Radiotekhnika, 10, 48-55, Apr 55

Abstract : Rigorous formulas for calculations of directional diagrams of radiations from a slot cut in a round disk of finite dimensions are derived. Plotting of the directional diagrams are carried out for equatorial and meridional planes of an elementary slot in the center of a disk. Directivity of radiation from a slot can be improved considerably by changing the size of the disk. These calculations are considerably simplified when the diameter of the disk exceeds certain dimensions, as the configuration of its directional diagram approaches to that of a diagram from a slot cut in a long strip. Four references; 1 USSR. Diagrams

Institution: All-Union Scientific and Technical Society of Radio Engineering and Electric Communications imeni A. S. Popov. (VNORiE)

Submitted : October 14, 1953

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR/Physics - Electrical Vibrators

Card 1/1 Pub. 153 - 20/24

Author : Kocherzhevskiy, G. N.

Title : Study of electrical vibrators situated close to an ideally conducting elliptical cylinder

Periodical : Zhur. tekh. fiz., 25, No 6 (June), 1955, 1140-1154

Abstract : The author considers the influence of shape and dimensions of an ideally conducting elliptical cylinder upon the directional diagram of an electrical vibrator placed close to the cylinder. He compares the results of calculation with the results of experiments. He solves the posed problem by the method used in solving problems of diffraction of planar wave incident upon an elliptical cylinder with determination of total field as sum of fields of incident (plane) and diffracted wave and calculation of direction diagrams of given system on basis of principle of interaction; he does not employ the so-called method of Green functions. Seven references: e.g. N. P. Brusentsov, Vestnik MGU [Herald of Moscow State University], No 9, 1954.

Institution :

Submitted : August 1, 1953

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

9 (1)

SOV/112-57-5-11224

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1957, Nr 5, p 238 (USSR)

AUTHOR: Kocherzhevskiy, G. N., Brusentsov, N. P.

TITLE: The Radiation Pattern of a Radiator Placed Near an Elliptical Cylinder as a Function of the Cylinder Parameters (Diagramma napravlennosti izluchatelya, raspolozhennogo vblizi ellipticheskogo tsilindra, kak funktsiya parametrov tsilindra)

PERIODICAL: Tr. Mosk. energ. in-ta, 1956, Vol 21, pp 32-48

ABSTRACT: Radiation directivity is examined for the following cases: (1) an electric radiator oriented along the axis of the elliptical cylinder; (2) an electric radiator oriented at right angles with the axis of the elliptical cylinder (in the plane normal to the cylinder axis); (3) a magnetic radiator oriented along the cylinder axis (a longitudinal slot) and placed on the surface of the elliptical cylinder. Derivation of formulae for radiation patterns is made in the following way: field is determined in the space surrounding the cylinder as

Card 1/3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SOV/112-57-5-11224

The Radiation Pattern of a Radiator Placed Near an Elliptical Cylinder as a . . . .

a function of angles of incidence of a plane wave at the cylinder; a radiation pattern of a receiving antenna placed at some point is determined; from the principle of reciprocity, the radiation pattern of the radiator placed near the cylinder is determined. Formulae are presented for calculating the radiation patterns in a plane perpendicular to the cylinder axis. The formulae establish a relationship between the radiation pattern and the size and parameters of the cylinder. Estimated radiation patterns are presented which illustrate the dependence of the radiation pattern on the following factors: radiator placement with respect to the cylinder, eccentricity of the cylinder cross-section, cross-section perimeter, and cylinder-radiator distance. Experiments were needed to clarify how much of the error in calculations was due to the assumption of an infinitely long cylinder. A comparison of experimental data with calculations showed that, with a short cylinder, the discrepancy is considerable, particularly in the rear half-space. A good agreement was obtained with

Card 2/3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Category : USSR/Radiophysics - Radiation of radio waves. Antennas I-5

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 1850

Author : Kocherzhevskiy, G.N.
Title : Directivity Patterns of Waveguide Slit Antennas

Orig Pub : Tr. Mosk. energ. in-ta, 1956, Vyp. 21, 49-53

Abstract : In the calculation of the directivity pattern of waveguide slit antennas, great difficulties are encountered in evaluating the effect of the waveguide itself in the plane perpendicular to the waveguide axis. The author proposes to allow for this factor by replacing the rectangular waveguide either with an elliptic cylinder, having a distance between foci equal to the large dimension of the rectangular waveguide and a perimeter equal to the perimeter of the transverse section, or else with a strip. The directivity patterns of slits cut in such bodies were investigated by the author previously (Abstract 1849). The validity of the initial assumption was estimated from the agreement with experiment. The first approximation gives a better agreement for waveguide sections that are nearly square; the second is better for extended waveguides. A waveguide of standard section is best approximated by an elliptic cylinder with an eccentricity $\underline{1} = 0.83$.

Card : 1/1

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

NADENENKO, Sergey Ivanovich; PISTOL'KORS, A.A., retsenzent; MARKOV, G.T., prof., retsenzent; KOCHERZHEVSKIY, G.N., kand.tekhn.nauk, otv. red.; VORONOVA, A.I., red.; SHLYKH, G.I., tekhn.red.

[Antennas] Antenny. Moskva, Gos.izd-vo lit-ry po voprosam svyazi i radio, 1959. 550 p. (MIRA 12:11)

1. Chlen-korrespondent AN SSSR (for Pistol'kors).
(Antennas (Electronics))

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

MARKOV, Grigoriy Timofeyevich. Prinimali uchastiye: TERESHIN, O.N., dotsent; VASIL'YEV, Ye.N., dotsent; DUPLENKOV, D.A., aspirant; SAZONOV, D.M., aspirant; NOSOV, O.N., inzh. PISTOL'KORS, A.A., retsenzent; DOLUKHANOV, M.P., prof., retsenzent; KOCHERZHEVSKIY, G.N., dotsent, red.; VORONIN, K.P., tekhn.red.

[Antennas] Antenny. Moskva, Gos.energ.izd-vo, 1960. 534 p. (MIRA 14:4)

1. Chlen-korrespondent AN SSSR (for Pistol'kors).
(Radio--Antennas)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

AYZENBERG, Grigoriy Zakharovich; Prinimali uchastiye: BELOUSOV, S.P.; YAMPOL'SKIY, V.G.; OLIFER, L.K.; SHKUD, M.A.; KOCHERZHEVSKIY, G.N., otv. red.; SHEFER, G.I., tekhn. red.

[Shortwave antennas] Korotkovolnovye antenny. Moskva, Sviaz'-izdat, 1962. 814 p. (MIRA 15:9)
(Antennas (Electronics))

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHEVSKIY, G.N.; GOLDOVANSKIY, P.N.; ZHURBENKO, E.M.; CHERNYSHEV, O.V.

Logarithmic antennas for shortwave operation. Elektrosviaz' 17 no.12: 58-67 D '63. (MIRA 17:2)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

ACCESSION NR: AP4041000 S/0106/64/000/006/0012/0018

AUTHOR: Kocherzhevskiy, G. N.; Goldovanskiy, P. N.; Zhurbenko, E. M.; Chernyshev, O. V.

TITLE: Input impedance of short-wave log-periodic antennas

SOURCE: Elektrosvyaz', no. 6, 1964, 12-18

TOPIC TAGS: antenna, short wave antenna, log periodic antenna, antenna input impedance, radio communication

ABSTRACT: The results of an experimental investigation of the input impedance of some spatial and planar log-periodic antennas are reported. Input-resistance vs. frequency curves are presented on the basis of measurements in the 200-1,000-mc band; a spatial antenna with a trapezoidal radiator and $\alpha = 140$, $\tau = 0.86$, and $\psi = 20^\circ$ was tested. Similar curves are reported for two other antennas having triangular radiators and $\alpha = 30^\circ$, $\tau = 0.9$, and $\psi = 20^\circ$ and 40°.

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

ACCESSION NR: AP4041000

The results of experiments intended to raise the antenna input impedance by raising the characteristic impedance of the distribution feeder are also presented. A formula and graphs are offered for calculating the input impedance of log-periodic antennas. Orig. art. has: 13 figures, 4 formulas, and 1 table.

ASSOCIATION: MEIS (Moscow Electrotechnical Institute of Communications)

SUBMITTED: 21Sep63

ENCL: 00

SUB CODE: EC

NO REF SOV: 002

OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHEVSKIY, G.N.; GOLDOVANSKIY, P.N., ZHURBENKO, K.M.; CHERNYSHEV, O.V.

Output impedance of logarithmic shortwave antennas. Elektrosviaz' 18 no.6:12-18 Je '64. (MIRA 18:1)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHEVSKIY, Pavel Vladimirovich; KOMENDANT, K.P., red.

[Determination of the flexure and angle of shift of a beam axis] Opredelenie progiba i ugla povorota osi balki. Kyiv, Gos.izd-vo lit-ry po stroit.i arkhit. USSR, 1961. 73 p.

(Beams and girders) (MIRA 15:4)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SHTERN, I.A.; KIPNIS, Yu.B.; PLOTNIKOV, I.V.; PAVLOV, S.A.; PAVLOV, N.N.; VTOROV, G.N.; PROKURAT, R.E.; GLAGOLEVA, K.I.; KOCHERZHINSKAYA, Ye.L.; FEDOROVA, L.V.; MININ, I.T.

Artificial carbocylate leather. Kozh.-obuv. prom. 6 no.2:32-34 F'64. (MIRA 17:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, YU.A., GRIDNEV, V. N., SVECHNIKOV, V.N.

"On the Transformation of Ferrite Into Austenite During Electric Heating"

an aricle in the book "Questions on the physics of Metals and Metal Science", AS Ukr. SSR, Kiev, 1955, 151 pp.

So: S[illegible], No. 1102, 19 Oct 56

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, YU. A.

USSR/Solid State Physics - Phase Transformations in Solids, E-5

Abst Journal: Referat Zhur - Fizika, No 12, 1956, 34685

Author: Kocherzhinskiy, Yu. A.

Institution: None

Title: Dilatometric Investigations of Transformations in Iron-Carbon Alloys During Electric Heating

Original Periodical: Collection: Metallovedeniye i termicheskaya obrabotka, Moscow, Mashgiz, 1955, 63-73

Abstract: None

1 of 1

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Kocherzhinskiy, Yu. A.

USSR / Phase Conversions in Solids

E-5

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9283.

Author : Kocherzhinskiy, Yu, A.
Inst : Laboratory of Metal Physics, Academy of Sciences, Ukrainian SSR.
Title : Contribution to the Theory of Transformation of Austenite in Iron-Carbon Alloys.

Orig Pub : Fiz. Metallov i Metallovedeniye, 1955, 1, No 3, 488-493

Abstract : The author bases the separation of the processes of phase transformation into "diffusion" and "diffusionless" not on on the degree of intensity of the diffusion, but on the role played by the diffusion of certain components during the process of formation of the new phase. After stating the existing points of view concerning the mechanism of formation of austenite, it is shown by methods of geometric thermodynamics that the transformation of ferrite into austeni-

Card 1/3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR / Phase Conversions in Solids

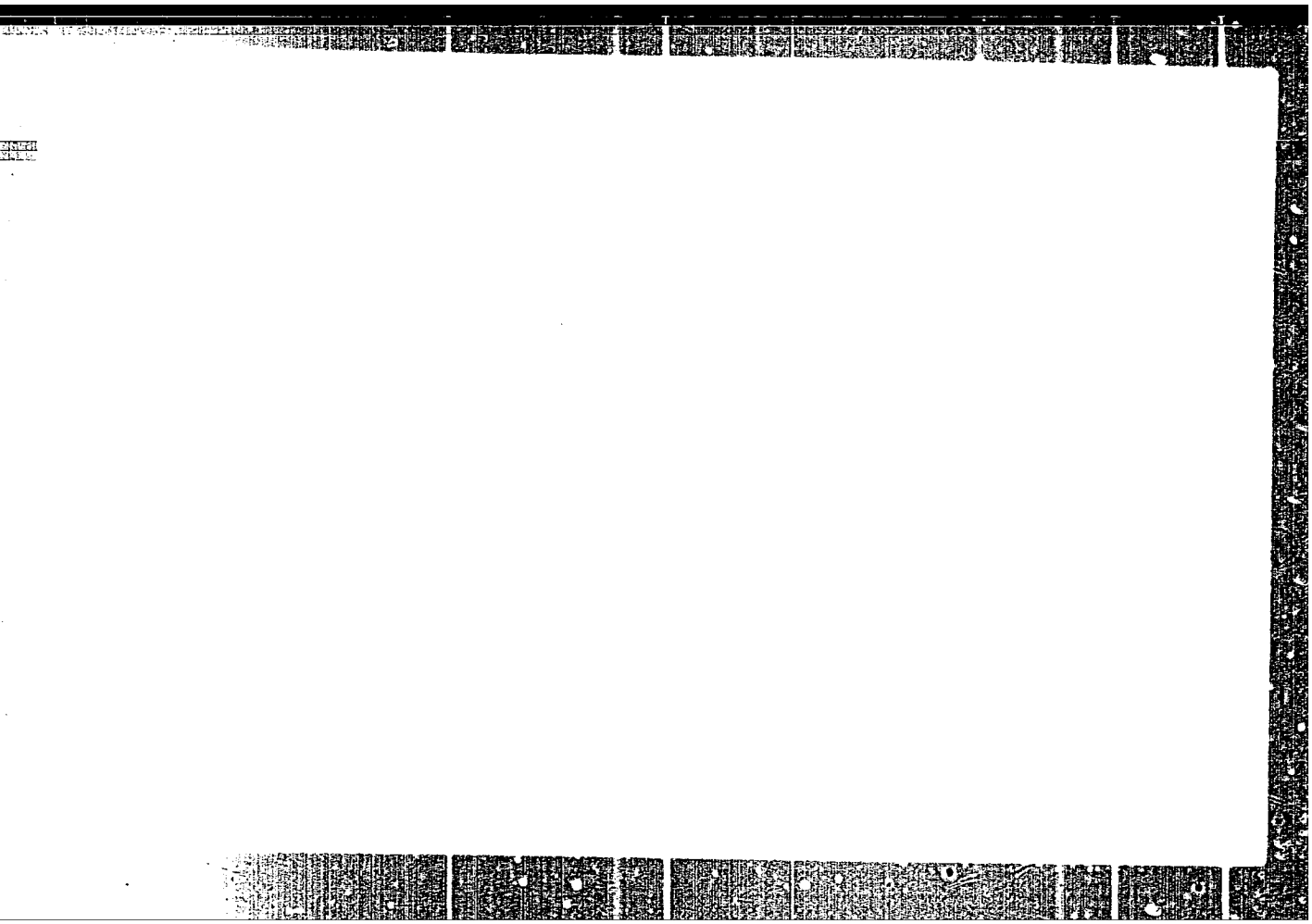
E-5

Abs Jour : Ref Zhur - Fizika, No 4, 1957, No 9283

Abstract : te can be both diffusion and diffusionless, depending on the temperature. Diffusionless formation of austenite is possible below the equilibrium temperature A_3 for a given composition. The limits of applicability of the diffusion theory of austenite formation are indicated. The same method is used to investigate the qualitative dependence of the position and magnitude of the temperature interval ($A_c"$) of diffusionless formation of austenite on the composition and structure of alloys. It is shown that increasing the content of C above its maximum solubility in the ferrite does not influence the temperature at which diffusionless austenite formation begins (the point $A_{c"}$). Increasing the degree of dispersion of the carbides increases the (metastable) solubility of the carbon in the ferrite and therefore reduces the $A_{c"_1}$ point, and in principle it is possible

Card : 2/3

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

USSR/ [illegible] Metallophysics

Card [illegible] Pub. 22 - 12/47

Authors : Kocherzhinskiy, Yu. A.

Title : New facts about the conversion of carbon steel perlite into austenite during electro-heating

Periodical : Dok. AN SSSR, 100/6, 1077-1078, Feb 21, 1955

Abstract : Experiments with U8 steel: 0.74% C, 0.24 Mn, 0.32% Si, 0.012 P and 0.014% S showed that the conversion perlite into austenite advances at 755°; during the process of conversion, the temperature rises first to 760°, then rises slowly until it reaches [illegible] at the end of the conversion cycle.

Institution : Academy of Sciences Ukr SSR, Metallophysics Laboratory

Presented by: Academician G. V. Kurdyumov, November 2, 1954

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Dokl. Ak. Nauk SSSR, 100/6, 1077-1078, Feb 21, 1955

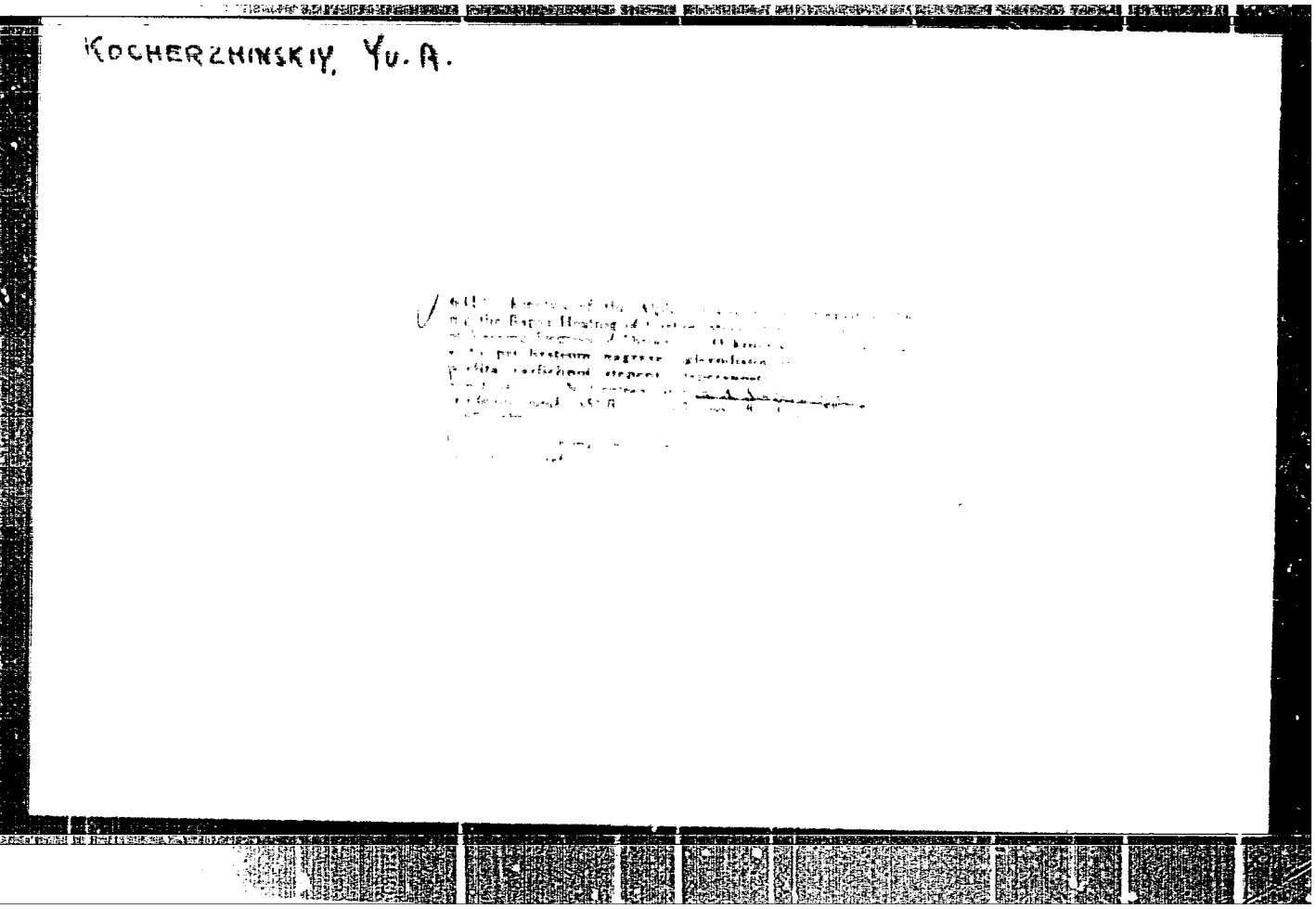
- 12/47

Microstructural studies of the [illegible] of cementite in their structure [illegible]. The effect of the rate of heating [illegible]. Four USSR references [illegible].

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu. A.



APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KRIVOGLAZ, M.A.; KOCHENZHINSKIY, Yu.A.

Diffusion in solids during heating. Sbor. nauch. rab. Inst. metallofiz. AN USSR no.7:105-114 '56. (MIRA 11:1)
(Solutions, Solid) (Heat--Conduction)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu. A.

AUTHORS: Kochershinskiy, Yu.A. (Kochershyns'kyy, Yu.O.) and Pan, V.M. 21-5-12/26

TITLE: On the Nature of the Superhardness of Steel in Electrical Tempering (K voprosu o prirode sverkhtverdosti stali pri elektrozakalke)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, Nr 5, pp. 474-477 (USSR)

ABSTRACT: In this research, steel of the У 8 grade (0.76% of C, 0.24% of Mn, 0.32% of Si, 0.012% of P and 0.014% of S) was tempered by heating with electric current of 50 cps frequency. The rate of heating was about $1,000^{\circ}sec^{-1}$ and the rate of cooling of the sample surface in running water was $12,000^{\circ}sec^{-1}$ which ensured rapid tempering. On the basis of dilatometric and thermal curves, shown in Figure 2, the degree of ferrite transformation was calculated with intervals of 0.01 sec and the graph of transformation $\alpha \rightarrow \gamma$ was drawn, which is shown in Figure 3. As can be seen from the curve 1 in Figure 3, the hardness of steel rises and reaches a peak in 0.07 sec. Then hardness decreases beginning from 0.1 sec up to 0.2 sec and later on remains constant. The transformation $\alpha \rightarrow \gamma$ is accompanied by the simultaneous dissolution of carbide, that is, the replacement of ferrite by martensite in the steel

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

On the Nature of the Superhardness of Steel in Electrical Tempering

structure leads to an increase in hardness. Thus the maximum of hardness corresponds to a bi-phase martensite-cementite structure. It is connected with a special metastable state arising due to rapid heating. The article contains 3 graphs and 2 Slavic references.

ASSOCIATION: Institute of Metallophysics of the AN Ukrainian SSR (Instytut metalofizyky AN URSR)

PRESENTED: By V.N. Svechnikov (V.M. Svyechnikov) Member of the AN Ukrainian SSR

SUBMITTED: 21 December 1956

AVAILABLE: Library of Congress

Card 2/2

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

137-58-6-13265

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 299 (USSR)

AUTHORS: Svechnikov, V.N., Gridnev, V.N., Kocherzhinskiy, Yu.A.

TITLE: On the Effect of Carbon Content and Original Structure on the Temperature of Austenite Formation in Iron-carbon Alloys on Rapid Heating (O vliyanii soderzhaniya ugleroda i iskhodnoy struktury na temperaturu obrazovaniya austenita v zhelezouglerodistykh splavakh pri bystrykh nagrevakh)

PERIODICAL: Sb. nauchn. rabot In-ta metallofiz. AN UkrSSR, 1957, Nr 8, pp 42-43

ABSTRACT: The temperatures of $\alpha-\gamma$ transformations (T) during electric heating at 20-200 degrees-C/sec of carbon steel containing 0.045-1.08% C with various structures were determined by the dilatometric method. In annealed steels containing structurally free ferrite, $\alpha-\gamma$ T begins at 755-760°C and ceases at 900-910°. In annealed steels containing no structurally free ferrite, $\alpha-\gamma$ T proceeds to completion at the stopping temperature on the thermal curves at 750-755°. In tempered steels the $\alpha-\gamma$ T takes place at lower temperatures: 30-35° lower in eutectoid steel and below the equilibrium point A_3 in hypo- N.K. eutectoid steel. 1. Carbon-iron alloys--Analysis 2. Carbon-iron alloys--Temperature factors 3. Carbon--Phase studies

Card 1/1

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SOV/137-58-9-20167

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 292 (USSR)

AUTHORS: Kocherzhinskiy, Yu.A., Permyakov, V.G.

TITLE: Magnetometric Investigation of the Dissolution of Cementite Upon the Electrical Heating of U8 Grade Steel (Magnitometricheskoye issledovaniye rastvoreniya tsementita pri elektronagreve stali U8)

PERIODICAL: Sb. nauchn. rabot In-ta metallofiz. AN UkrSSR, 1957, Nr 8, pp 44-50

ABSTRACT: To investigate the process of the dissolution of cementite (C) upon electrical heating it is proposed that a magnetometric method, based upon the measurement of the intensity of the magnetic effect in the point A_0 be used. It is evident that upon the passing of C into solid solution the effect at the point A_0 must decrease. The investigation was conducted on a wire 1.7 mm in diam of the following composition (in %): C 0.76, Mn 0.24, Si 0.32, P 0.012, S 0.014 with an initial lamellar pearlite structure. Electrical heating at a rate of 45°C/sec and the quenching of the specimens (S) was carried out on a special dilatometer. Preliminary experiments showed that the process

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SOV/137-58-9-20167

Magnetometric Investigation of the Dissolution of Cementite (cont.)

of the dissolution of C is accompanied by a decrease in volume. Therefore, the time of the dissolution of C was determined by the time which passed between the beginning of the contraction, which is marked sharply on the dilatometer, and the moment of quenching. It constituted: 0.45; 0.75; 1.94; 4.32, and 5.95 sec. For the quenching, a tube was put over the specimen. After heating for the necessary period of time the current was switched off and a current of water under pressure was passed through the tube which ensured an abrupt quenching. The absolute error in the measurement of time constituted ~0.08 sec. The error caused by the time lag in cooling (the time elapsed between the switching off of the current and the action of the water) was on the average up to 0.04 sec. and $\leq$ 0.30 sec. For the magnetic investigation specimens 22 ± 0.1 mm long were cut out from the wires quenched on the dilatometer. The magnetic measurements were carried out by the differential method developed by V.G. Permyakov, Yu.V. Naydich, and S.A. Rybak (RZhMet, 1956, Nr 5, abstract 4910). To establish the effect in the point A_0 the heating of S was conducted in an oil bath, the temperature of which was measured by a mercury thermometer with a ± 1° precision. It is shown that the data obtained by the magnetometric and the resistometric methods agree satisfactorily. Upon the heating of U8-grade steel with an initial lamellar pearlite structure at the rate of 45°/sec, the time of dissolution of C amounts to ~ 3.5 sec. 1. Steel--Induction heating 2. Steel--Test methods
Card 2/2 3. Cementite--Transformations 4. Induction heating --Metallurgical effects T.M.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.; PAN, V.M.; SHURIN, A.K.

Investigating chromium-niobium-vanadium alloys. Issl. po zharopr. splav. 3:168-177 '58. (MIRA 11:11)
(Chromium-niobium-vanadium alloys--Metallography)
(Phase rule and equilibrium)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

AUTHOR: Kocherzhinskiy, Yu.A. 32-24-4-24/67

TITLE: On the Problem of the Quantitative Estimation of the Degree of Transformation in Steel According to Dilatometric Curves (K voprosu o kolichestvennoy otsenke stepeni prevrashcheniya v stali po dilatometricheskim krivym)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 4, pp. 437-439 (USSR)

ABSTRACT: M.M. Levitan (Ref 1) stressed the fact that the quantity of the phase formed is determined by the ordinate which is bounded between the assumed (extrapolated) line characterizing the purely thermal modification of the order of the sample and the actual dilatometric curve. As the employment of this method leads to discrepancies with respect to the test, a more accurate method for the treatment of dilatometric curves is recommended. From investigations carried out with the transformations of iron it was found that, besides the order of the specific volumina (of the actual-, the α-, as well as of the γ-component) also that of carbide must be known. From diagrams given it follows that, in the

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

On the Problem of the Quantitative Estimation of the Degree of Transformation in Steel According to Dilatometric Curves

32-24-4-24/67

case of a simultaneous ferrite transformation and cementite dissolution, at the same velocity and constant temperature, a similarity with the diffusion process of the perlite-austenite transformation can be observed in the case of slow heating. If cementite dissolution takes place more slowly in isothermal transformation than $\alpha \rightarrow \gamma$ transformation, the part of the total contraction is at each moment equal to the degree of transformation of ferrite. A diagram is given for the simultaneous processes of ferrite transformation and carbide dissolution, the general formula of calculation being valid. Several other cases of transformation are mentioned and dilatometric curves are given. There are 2 figures, and 4 references, 4 of which are Soviet.

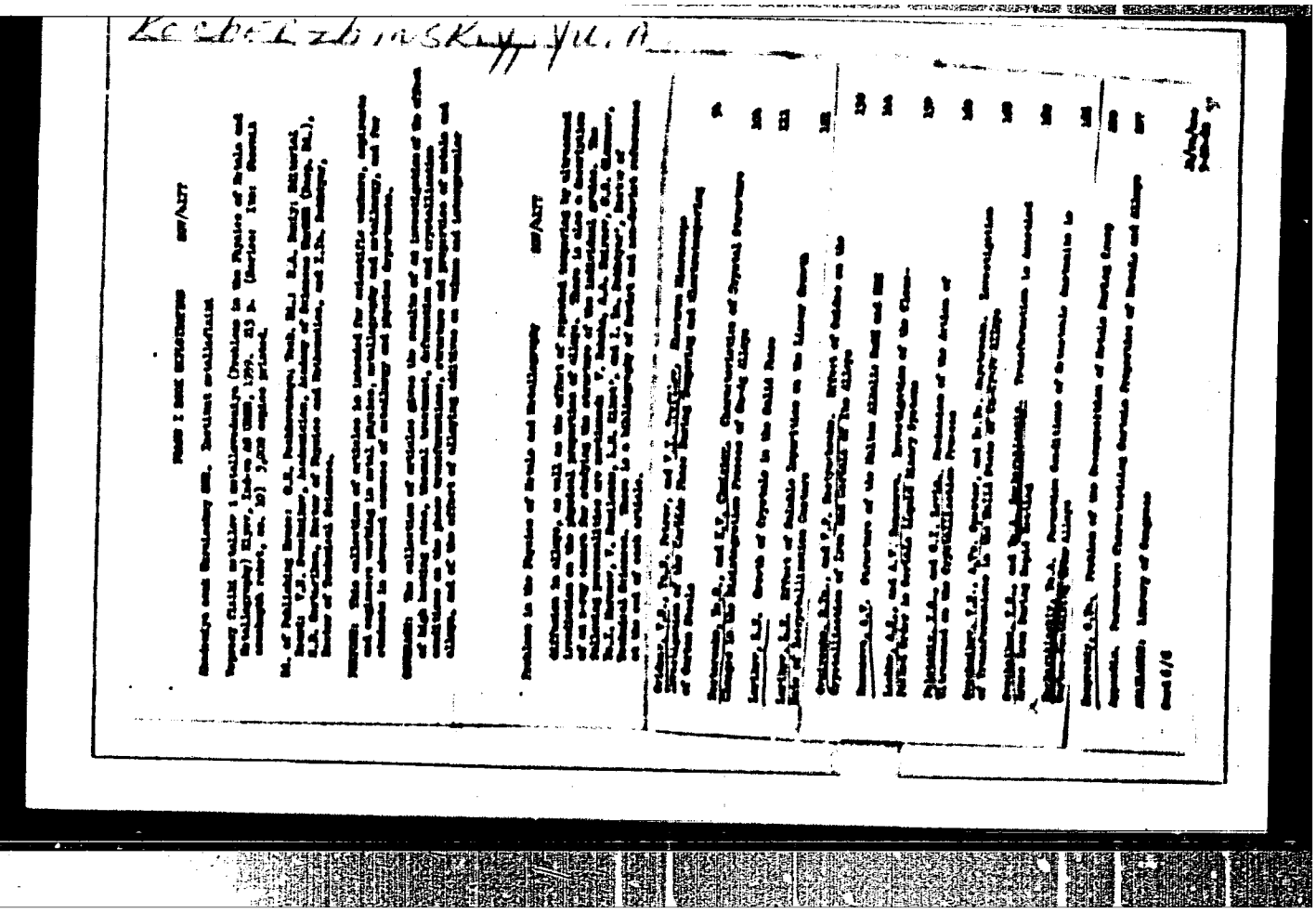
ASSOCIATION: Institut metallofiziki Akademii nauk SSSR (Institute for Metal Physics, AS Ukrainian SSR)

1. Steel--Transformations 2. Iron--Transformations
3. Metals--Phase studies

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Kocherzhinskiy, Yu. A.

18(7) PHASE I BOOK EXPLOITATION SOV/3355

Akademiya nauk SSSR. Institut metallurgii. Nauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. IV (Studies on Heat-resistant Alloys, vol. 4), Moscow, Izd-vo AN SSSR, 1959. 400 p. Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. P. Guseva; Editorial Board: I. P. Bardin, Academician; G. V. Kurdyumov, Academician; N. V. Ageyev, Corresponding Member, USSR Academy of Sciences; I. A. Oding, I. M. Pavlov, and I. F. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various problems in the structural metallurgy of heat-resistant alloys. Some are concerned with theoretical principles, some with descriptions of new equipment and methods, others with properties of specific materials. Various phenomena occurring under specified conditions are studied and reported on. For details, see Table of Contents. The articles are accompanied by a number of references, both Soviet and non-Soviet.

Studies (Cont.) SOV/3355

Card 8/12

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.

Transformations in annealed Armco iron during rapid heating. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.10:182-185 '59.(MIRA 13:9)
(Iron--Metallography) (Annealing of metals)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu.A.

Conditions for the formation of metastable austenite in iron-carbon alloys. Sbor. nauch. rab. Inst. metallofiz. AN URSR no.10:186-199 '59. (MIRA 13:9)

(Phase rule and equilibrium) (Steel--Heat treatment)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

18(7) SOV/32-25-5-53/56

AUTHOR: Kocherzhinskiy, Yu. A.

TITLE: On the Methods of the Investigation of the Mechanism of the Transformation of Pearlite Into Austenite (O metodakh izucheniya mekhanizma prevrashcheniya perlita v austenit). (On the Occasion of an Article by O. T. Fomin, Published in the Periodical "Zavodskaya laboratoriya" Nr 1, 1958) (Po povodu stat'i O. T. Fomina, opublikovannoy v zhurnale "Zavodskaya laboratoriya" No 1, 1958 g.)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 637-638 (USSR)

ABSTRACT: It was found that O. T. Fomin's indication of the differential dilatometric method used in the investigation of the transformation of pearlite into austenite at increased and high heating temperatures being more perfect than the usual dilatometric method is incorrect. The effects described by Fomin were observed as early as 1940 (Ref 1) and are based on a deception. The conclusion regarding a temporal separation of the transformation of ferrite and cementite drawn by Fomin was brought about by the choice of an unsuitable device for investigating the process. There is certainly a separation of the

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

On the Methods of the Investigation of the Mechanism of the Transformation of Pearlite Into Austenite. (On the Occasion of an Article by G. T. Fomin, Published in the Periodical "Zavodskaya laboratoriya" Nr 1, 1958)

effects in the transformation of pearlite with fast heating but it can be observed by special methods only (Ref 2). The scheme of the device by Shevenar permits precise observations only if the temperatures of the sample and the standard sample are equal which can be achieved with slow heating only. The magnetometric method suggested by Fomin, however, is suitable for the quantitative determination of $\alpha \rightarrow \gamma$ transformations in eutectoid and supereutectoid steels with slow heating. There are 3 Soviet references.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KORZENKO, O.F.; KOCHERZHINSKIY, Yu.A.

Investigating by differential thermal analysis transformations in chromium during heating and quenching. Issl. po zharopr. splav. 6:238-239 '60. (MIRA 13:9)
(Chromium--Heat treatment) (Thermal analysis)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/601/60/000/011/003/014
D207/D304

AUTHORS: Svechnikov, V. N., Kobzenko, G. P., and Kocherzhinskiy, Yu. A.

TITLE: On the problem of polymorphism of chromium

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 11. 1960. Voprosy fiziki metallov i metallovedeniya, 28-29

TEXT: The authors report observations on phase transformations in electrolytic chromium, reduced in hydrogen and subjected to zone refining in the Otdel tekhnologii splavov Instituta metallofiziki AN USSR (Division of Alloy Technology, Institute of Metal Physics, AS UkrSSR) by V. G. Yepifanov. Differential thermal analysis was carried out using a method described by G. P. Kobzenko and Yu. A. Kocherzhinskiy (Ref. 2: Op. cit., pp. 160-163). The results obtained are shown in a figure as heating

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

On the problem of...

curves obtained directly (I) and differentially (II). Curve I has a horizontal plateau representing melting. Curve I should be regarded as approximate because the apparatus was calibrated using the melting point of platinum (1773°C) as the upper temperature; the calibration graph had to be extrapolated beyond this point. Curve II shows no special features up to 1750°C. At this temperature, the curve begins to rise due to vaporization of chromium (the experiments were carried out in argon at a pressure close to atmospheric). At higher temperatures, curve II shows superposition of vaporization and melting. Neither curve I nor curve II has any features which might indicate allotropic transformations. This contradicts the results reported by D. S. Bloom et al. There are 1 figure and 2 references: 1 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: D. S. Bloom, J. W. Putnam, N. F. Grant, J. of Metals, 4, no. 6, 626, 1952. [Abstracter's note: Essentially complete translation.]

SUBMITTED: September 15, 1959
Card 2/3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/601/60/000/011/014/014
D207/D304

AUTHORS: Kobzenko, G. F., and Kocherzhinskiy, Yu. A.

TITLE: Differential thermal analysis of refractory alloys

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 11. 1960. Voprosy fiziki metallov i metallovedeniya, 160-163

TEXT: The authors describe an apparatus for differential thermal analysis of metals and alloys at temperatures up to 2000°C. The apparatus was developed at the Otdel metallovedeniya Instituta metallofiziki AN USSR (Metallography Division, Institute of Metal Physics, AS UkrSSR). The main novel features of the apparatus are its thermoelectric detector and its thermostat. A cylindrical sample (10 in Fig. 1) is placed in a refractory crucible 7 with a ceramic cover 9. The crucible stands freely

Card 1/13

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

at a thermocouple 6. Another thermocouple 4 is separated from 6 by a ceramic plate 5 and lies on a plate 3. The couple 4 serves as the standard; it records the conditions within a molybdenum or tungsten thermostat. The thermostat consists of a casing 13 and a cover 12; it is insulated from the sample and the couples by a ceramic cylinder 11 with a cover 8, and it is fixed to a ceramic tube 14. Leads 1 of the thermocouples are protected by a ceramic tube 2. The detector thermocouple is shown in greater detail in a second figure. The thermostat is placed in a furnace with a tungsten heater and water-cooled copper leads. Thermal insulation of the furnace is provided by ceramic and metal shields as well as an outer water-cooled metal jacket. The heater is supplied by two 1.2 kW transformers. The working space is evacuated to 10^{-3} mm Hg or filled with argon. For this purpose, pumps ЦВЛ-100 (TsVL-100) and ВН-461 (VN-461) are used. Vacuum measurements are carried out with gauges ЛТ-2 (LT-2) and ВТ-2 (VT-2). The apparatus is

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Differential thermal...

capable of handling small samples (0.6 - 1.5 g). It was tested by analyzing pure chromium and various binary and ternary alloys. There are 5 figures and 3 Soviet-bloc references.

SUBMITTED: September 18, 1959

Card 3/4 3

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu. A.

PHASE I BOOK EXPLOITATION SOV/5511

Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Metallovedeniye i termicheskaya obrabotka (Physical Metallurgy and Heat Treatment of Metals) Moscow, Mashgiz, 1961. 330 p. Errata slip inserted. 5,000 copies printed.

Sponsoring Agency: Gosudarstvennyy nauchno-tekhnicheskiy komitet Soveta Ministrov UkrSSR. Nauchno-tekhnicheskoye obshchestvo mashinostroitel'noy promyshlennosti. Kiyevskoye oblastnoye pravleniye.

Editorial Board: M. P. Braun, Doctor of Technical Sciences, I. Ya. Dekhtyar, Doctor of Technical Sciences, D. A. Draygor, Doctor of Technical Sciences, I. S. Kamenichnyye, Engineer, Ye. A. Markovskiy, Candidate of Technical Sciences, V. G. Permyakov, Doctor of Technical Sciences, and A. V. Chernovol, Candidate of Technical Sciences; Ed.: M. S. Soroka; Tech. Ed.: M. S. Gornostaypol'skaya; Chief Ed., Mashgiz (Southern Dept.): V. K. Serdyuk, Engineer.

Card 1/10

PURPOSE: This collection of articles is intended for scientific workers and technical personnel of research institutes, plants, and schools of higher technical education.

COVERAGE: The collection contains papers presented at a convention held in Kiyev on problems of physical metallurgy and methods of the heat treatment of metals applied in the machine industry. Phase transformations in metals and alloys are discussed, and results of investigations conducted to ascertain the effect of heat treatment on the quality of metal are analyzed. The possibility of obtaining metals with given mechanical properties is discussed, as are problems of steel brittleness. The collection includes papers dealing with kinetics of transformation, heat treatment, and properties of cast iron. No personalities are mentioned. Articles are accompanied by references, mostly Soviet.

TABLE OF CONTENTS:

Card 2/10

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/123/62/000/016/007/013
A004/A101

AUTHORS: Kocherghinskiy, Yu. A., Pan, V. M.

TITLE: Connection between the hardness of hardened steel and the special features of phase transformations in high-speed electric heating

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 16, 1962, 27, abstract 16B146 ("Sb. nauchn. rabot In-ta metallofiz. AN USSR", 1961, no. 12, 111 - 116)

TEXT: У 8 (U8) grade steel specimens 1.7 mm in diameter were investigated, having an initial structure of lamellar pearlite. For hardening the Beta Sakui system was used. The electric resistance of the specimens was measured before and after hardening. The cooling rate of the specimens in water reached 10,000 degree/sec, which ensured an abrupt hardening (the heating rate attained 1,000 degree/sec). Kinetic curves of the $\alpha \rightarrow \gamma$ transformation were plotted in the course of the work according to data of the dilatometric investigation, while also the dependence of the change in phase composition and hardness of the hardened specimens on the heating time was obtained. As a result of the work it was found that the maximum hardness corresponds to the termination of the $\alpha \rightarrow \gamma$ transformation at an incomplete

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/659/62/008/000/007/028
I048/I248

AUTHORS: Svechnikov, V.N., Kocherzhinskiy, Yu.A., Latysheva, V.I., and Pan, V.M.

TITLE: A study of chromium-niobium-titanium alloys

SOURCE: Akademiya nauk SSSR. Institut metalurgii. Issledovaniya po zharoprochnym splavam. v.8. 1962. 56-61

TEXT: This is part of a systematic study of ternary systems consisting of Cr, Nb, and various third components; this part deals with Cr-based alloys containing up to 47.5% Nb and 37.5% Ti, and with Nb-based alloys containing up to 30% Cr and 30% Ti. The isothermal sections at 1250°C and 1380°C are presented. In the Cr-rich corner (above 60% Cr) there are three one-phase regions (α-solid solution based on Cr, β-solid solution based on $NbCr_2$, and γ-solid solution based on $TiCr_2$), three two-phase regions ($\alpha+\beta$, $\alpha+\gamma$, $\beta+\gamma$) and one three-phase region ($\alpha+\beta+\gamma$) at 1250°C; at 1380° only α, β, and $\alpha+\beta$ exist and a liquid phase (composition 25-35% Ti, 5-15% Nb) is observed. In the Nb rich corner (above 70%

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/659/62/008/000/007/028
I048/I248

A study of chromium-niobium-titanium alloys

Nb) there are a single phase region δ (Nb-based solid solution) and a two-phase region $\beta + \delta$; the δ region is enlarged on heating to 1380° but both regions exist at 1250 and 1380°C. Although some of the alloys in the system studied are characterized by a high hardness (e.g., H_T = 1187 kg./sq.,m. for the alloy containing 30% Cr, 70% Nb at 600°C), and other are characterized by high resistance to scale formation at high temperatures (e.g., the alloy containing 25% Cr, 5% Ti), there are no alloys which have both properties simultaneously. There are 4 figures and 2 table.

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu. A.

AID Nr. 984-11 6 June

Cr-Nb-Ti SYSTEM (USSR)

Storchak, V. N., Yu. A. Kocherzhinskiy, V. I. Latysheva, and V. M. Pan. [illegible] Akademiya nauk UkrSSR. Institut metallofiziki. Sbornik nauchnykh [illegible] No. 16, 1962, 128-131. S/601/62/000/016/017/029

One hundred and forty Cr-Nb-Ti alloys melted from 99.987% pure Cr, 99.5% [illegible] Nb and iodide Ti have been studied. Phase boundaries were determined, and the isothermal section of the ternary diagram at 1250°C was plotted from the results of microscopic and x-ray diffraction analysis of alloys rapidly cooled after annealing at 1250°C for 75 hrs (Nb-rich alloys, for 150 hrs). The isothermal section was found to contain four single-phase (α, β, δ, ε) regions, five two-phase ($\alpha + \beta$, $\varepsilon + \delta$, $\beta + \delta$, $\alpha + \varepsilon$) regions, and two three-phase [illegible] ($\alpha + \beta + \varepsilon$, $\delta + \beta + \varepsilon$) regions, where α is a Cr-base solid solution, β, a low-temperature modification of the $NbCr_2$ ($TiCr_2$) intermetallic compound (Laves

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

AID Nr. 984-11 6 June

Cr-Nb-Ti SYSTEM (Cont.)

S/601/63/000/016/017/023

[illegible] the $MgCu_2$ type), δ, a (Ti-Nb) base solid solution, and ε, a high-[illegible]re modification of the $NbCr_2$ intermetallic compound (Laves phase [illegible]$_3$ type). From the data of the differential thermal analysis the [illegible]am of the $Cr-NbCr_2-TiCr_2$ system was plotted. The solubility [illegible] with 30% Ti was found to vary from 19.2% at the solidus tempera-[illegible]°C) to 17% at 1000°C. [MS]

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KACHERZHINSKIY, YU.A.

AID Nr. 984-12 6 June

Cr-Ti PHASE DIAGRAM (USSR)

Svechnikov, V. N., Yu. A. Kocherzhinskiy, and V. I. Latysheva. IN: Akademiya nauk Ukr.SSR. Institut metallofiziki. Sbornik nauchnykh trudov, no. 13, 1962, 132-134. S/60..62/000 016/018/029

As a part of the investigation of the Cr-Nb-Ti system, the Institute of Physics of Metals of the Ukrainian Academy of Sciences has studied the Cr-Ti system. Fifteen Cr-Ti alloys with 0 to 100% Cr were melted from electrolytic Ni and iodide Ti in

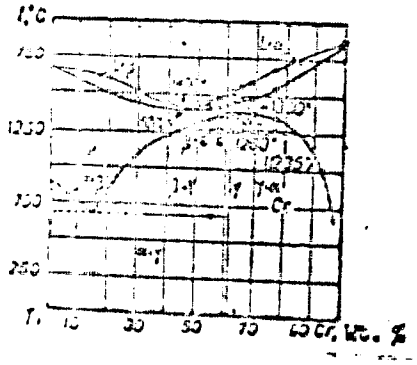
Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

Cr-Ti PHASE DIAGRAM [Cont'd]

S/601/62/000/016/018/029



Cr-Ti phase diagram

a nonconsumable tungsten electrode arc furnace in an argon atmosphere and homogenized at 1250°C for 75 hrs, also in argon. The alloys contained 0.004% max W and 0.0066% max Cu. X-ray diffraction patterns confirmed the existence of two modifications of the $TiCr_2$ intermetallic compound: a low-temperature Y-modification with a bcc lattice of the $MgCu_2$ type, and a high-temperature ε modification with an hcp lattice of the $MgZn_2$ type. Both modifications are Laves phases. The extent of the homogeneity zone of $TiCr_2$ does not exceed 2% Ti; its actual composition is 37-39% Ti. A complete Cr-Ti phase diagram [see illustration] was plotted from the data of differential thermal analysis.

[MS]

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

S/601/62/000/016/029/029
E111/E451

AUTHORS: Svechnikov, V.N., Kocherzhinskiy, Yu.A., Shurin, A.K., Pan, V.M., Spektor, A.Ts., Kobzenko, G.F., Boyko, Yu.A.

TITLE: Equipment for the physico-chemical investigations on high-melting chemically active metals

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalfyzyky. Sbornik nauchnykh rabot. no.16. Kiev, 1962. Voprosy fiziki metallov i metallovedeniya. 220-230

TEXT: The following equipment has been developed over several years in the Otdel metallovedeniya (Department of Science of Metals) of Institut metallofiziki AN UkrSSR (Institute of Physics of Metals AS UkrSSR) for studying alloys such as chromium-niobium-vanadium: 1) Arc furnace, including casting facilities, in which evacuation to 10^{-2} mm is followed by admission of argon to a pressure of 0.2 atm. [Abstracter's note: 10^{-2} mm is a very poor vacuum and the equipment would not work as described.] The argon is then purified in the furnace by a molten titanium getter. A rotary arrangement enables a clean section of the inspection window to be moved into position without breaking the vacuum. 2) Argon purification plant in which air and moisture are removed

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

by calcium chips at 700 to 750°C, through which a 250 litre batch of gas circulates by convection. 3) Installations for annealing specimens in vacuum or argon at temperatures up to 1000°C and up to 2500°C respectively. 4) An installation for differential thermal analysis in an inert medium at temperatures up to 2000°C with novel arrangements for the thermocouple transmitter, thermostat and furnace and taking 0.5 to 1.5 g specimens. Calibration is effected by melting pure metals, the calibration curve then automatically compensating for systematic errors. 5) An inert atmosphere quenching installation (maximum specimen temperature 1400°C). 6) Vertical inert-atmosphere dilatometer and differential dilatometer for temperatures up to 1500°C. There are 10 figures.

SUBMITTED: January 25, 1962

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu. A.

The Second All-Union Conference on Rhenium, sponsored by the Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR, and the State Institute of Rare Metals, was held in Moscow 19-21 November 1962. A total of 335 representatives from 83 scientific institutions and industrial establishments participated. Among the reports presented were the following: autoclave extraction of Re from Cu concentrates (A. P. Zelikman and A. A. Peredereyev); Re extraction from the gaseous phase (V. P. Savrayev and N. L. Peysakhov); recovery of Re by sorption and ion interchange (V. I. Bibikova, V. V. Il'ichenko, K. B. Lebedev, O. Sh. Tyurekhodzhayeva, V. V. Yermilov, Ye. S. Raimbekov, and M. I. Filimonov); production of carbonyl Re (A. A. Ginzburg); electrolytic production of high-purity Re and electroplating with Re (Z. M. Sominskaya and A. A. Nikitina); Re coatings on refractory metals produced by thermal dissociation of Re chlorides (A. N. Zelikman and N. V. Baryshnikov); plastic deformation and thermomechanical treatment of Re (V. I. Karavaytsev and Yu. A. Sokolov); growth of Re single crystals and effect of O_2 on their properties (Ye. M. Savitskiy and G. Ye. Chuprikov); Re-Mo, Re-W, and Re-precious-metal alloys (Ye. M. Savitskiy, M. A. Tylkina, and K. B. Povarova); synthesis of Re nitrides, silicides, phosphides, and selenides (G. V. Samsonov, V. A. Obolonchik, and V. S. Neshpor); weldability of Re-Mo and Re-W alloys (V. V. D'yachenko, B. P. Morozov, and O. N. Kiebanov); new fields of application for Re and Re alloys (M. A. Tylkina and Ye. M. Savitskiy); and Re-Mo alloy for thermocouples (S. K. Danishevskiy, Yu. A. Kocherzhinskiy, and O. B. Lapp). [WW]

Tsvetnyye metally, no. 4, Apr 1963, pp 92-93

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

ACCESSION NR: AT4010700 S/2601/63/000/017/0209/0210

AUTHOR: Kocherzhinskiy, Yu. A.; Kobzenko, G. F.; Pan, V. M.; Sviridenko, V. K.; Yupko, L.-M.

TITLE: Calibration of the VR-5/20 thermocouple according to critical points up to 3000C. Determination of the melting points of vanadium and niobium of high purity

SOURCE: AN UkrRSR. Insty*tut metalofizy*ky*. Sbornik nauchny*kh trudov, no. 17, 1963. Voprosy* fiziki metallov i metallovedeniya, 209-210

TOPIC TAGS: thermocouple, VR-5/20 thermocouple, thermocouple calibration, vanadium, niobium, vanadium melting point, niobium melting point, tungsten rhenium alloy

ABSTRACT: After calibration studies using the melting points of silver, gold, iron, nickel, palladium, platinum, chromium, molybdenum, and tantalum had shown that the VR-5/20 thermocouple (consisting of electrodes made of tungsten alloys containing 5 and 20% rhenium, respectively) could be used for the accurate determination of temperatures up to 3000C, the authors applied the technique of V. S. Mikheyev to the determination of the melting points of vanadium (1950C) and niobium (2520C). "In conclusion, the authors would like to thank A. M. Gurevich and Ye. I. Pavlova for making the thermocouple available." Orig. art.

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

ACCESSION NR: AT4010700

has: 1 figure and 1 table.

ASSOCIATION: Insty*tut metalofizy*ky* AN UkrRSR (Metallophysics Institute, AN UkrRSR)

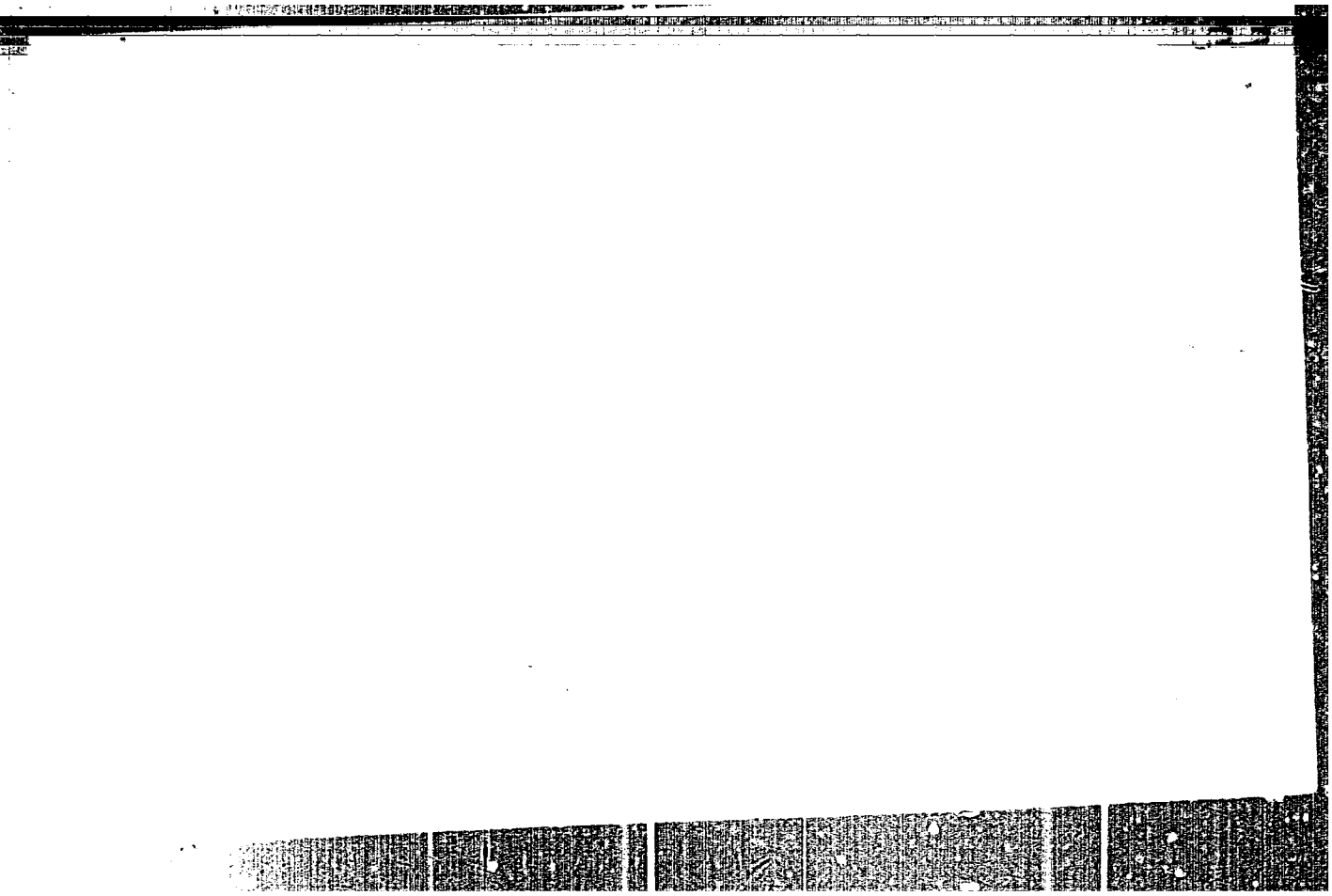
SUBMITTED: 00 DATE ACQ: 31Jan64 ENCL: 00

SUB CODE: ML NO REF SOV: 003 OTHER: 001

Card 2/2

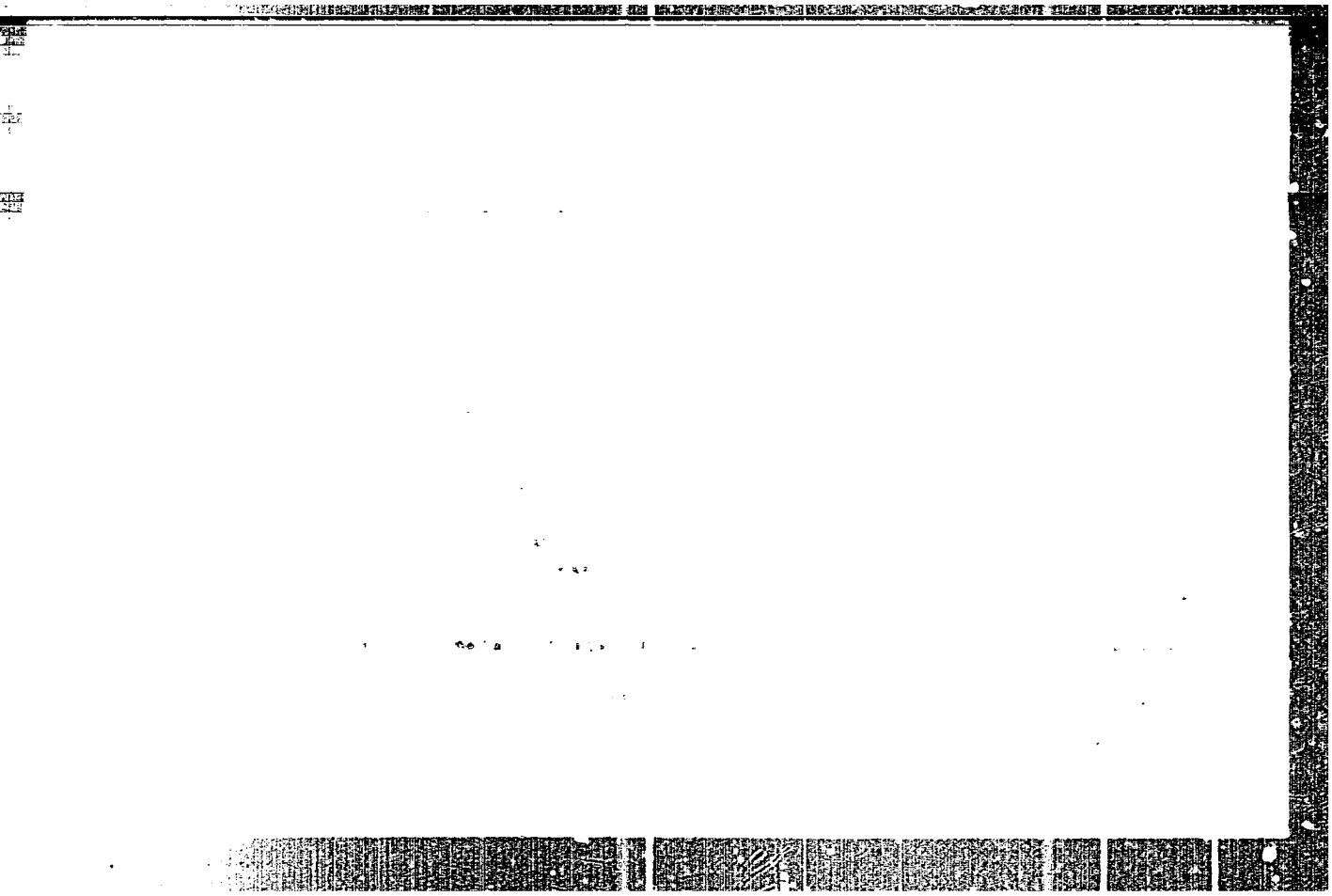
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



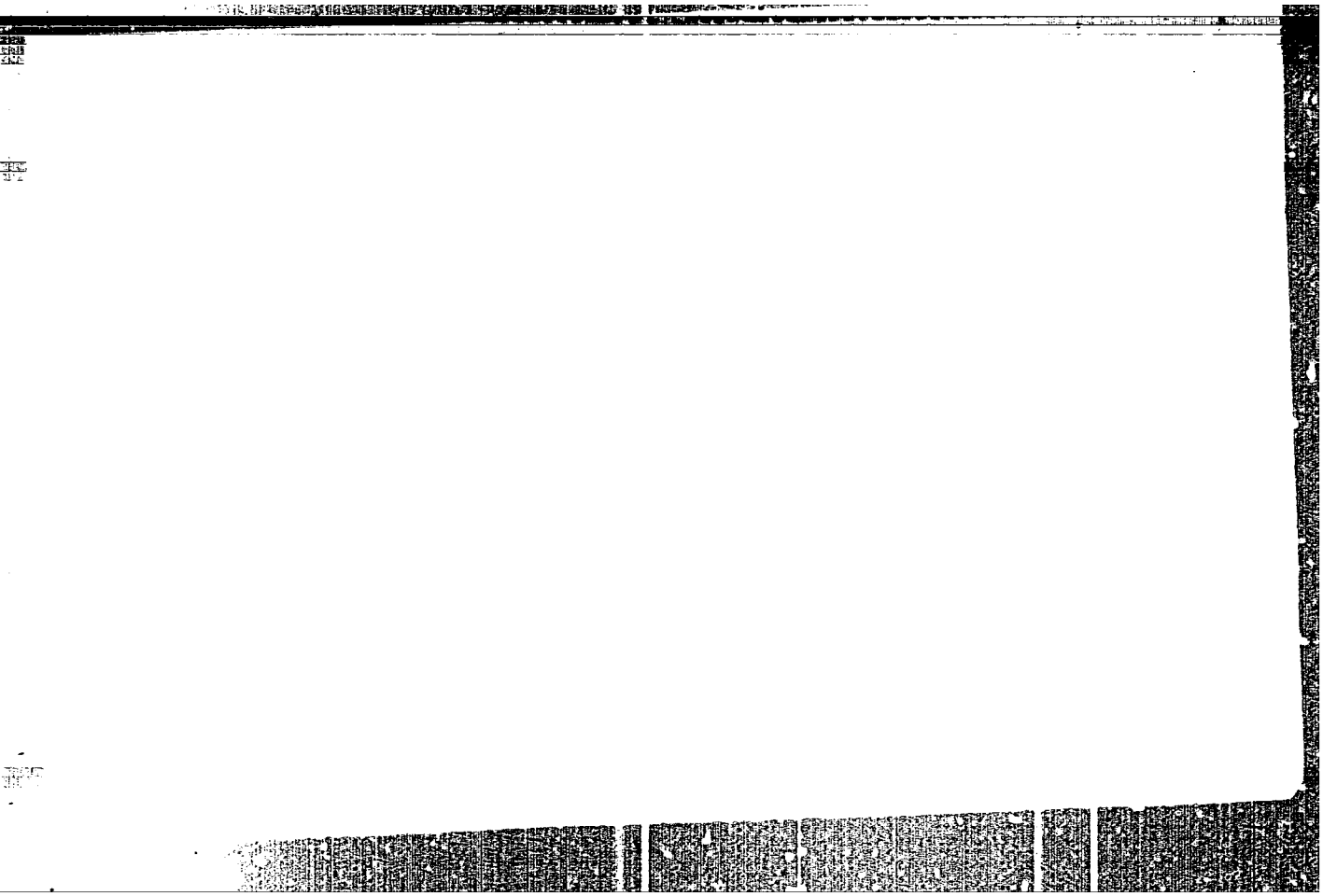
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



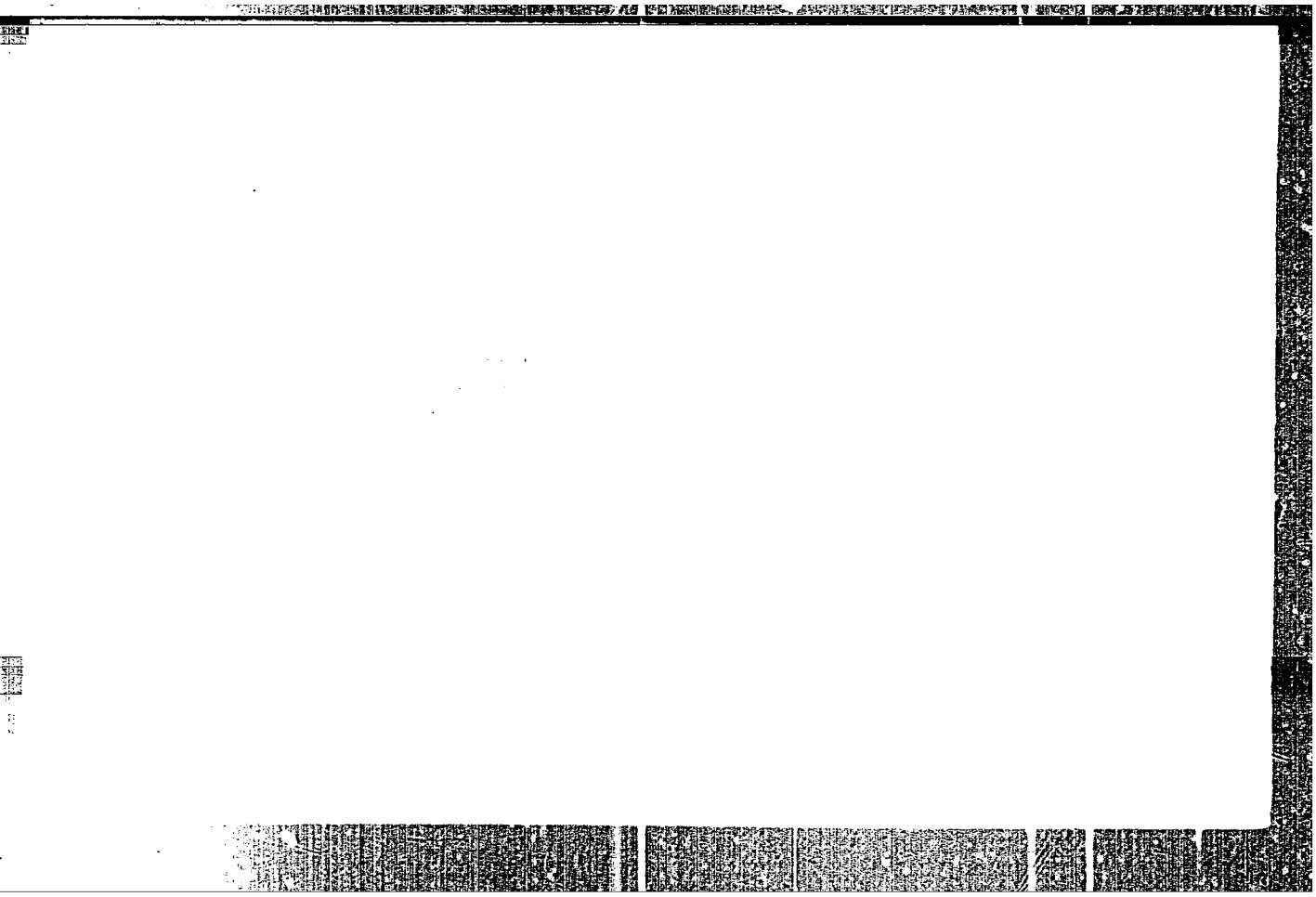
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



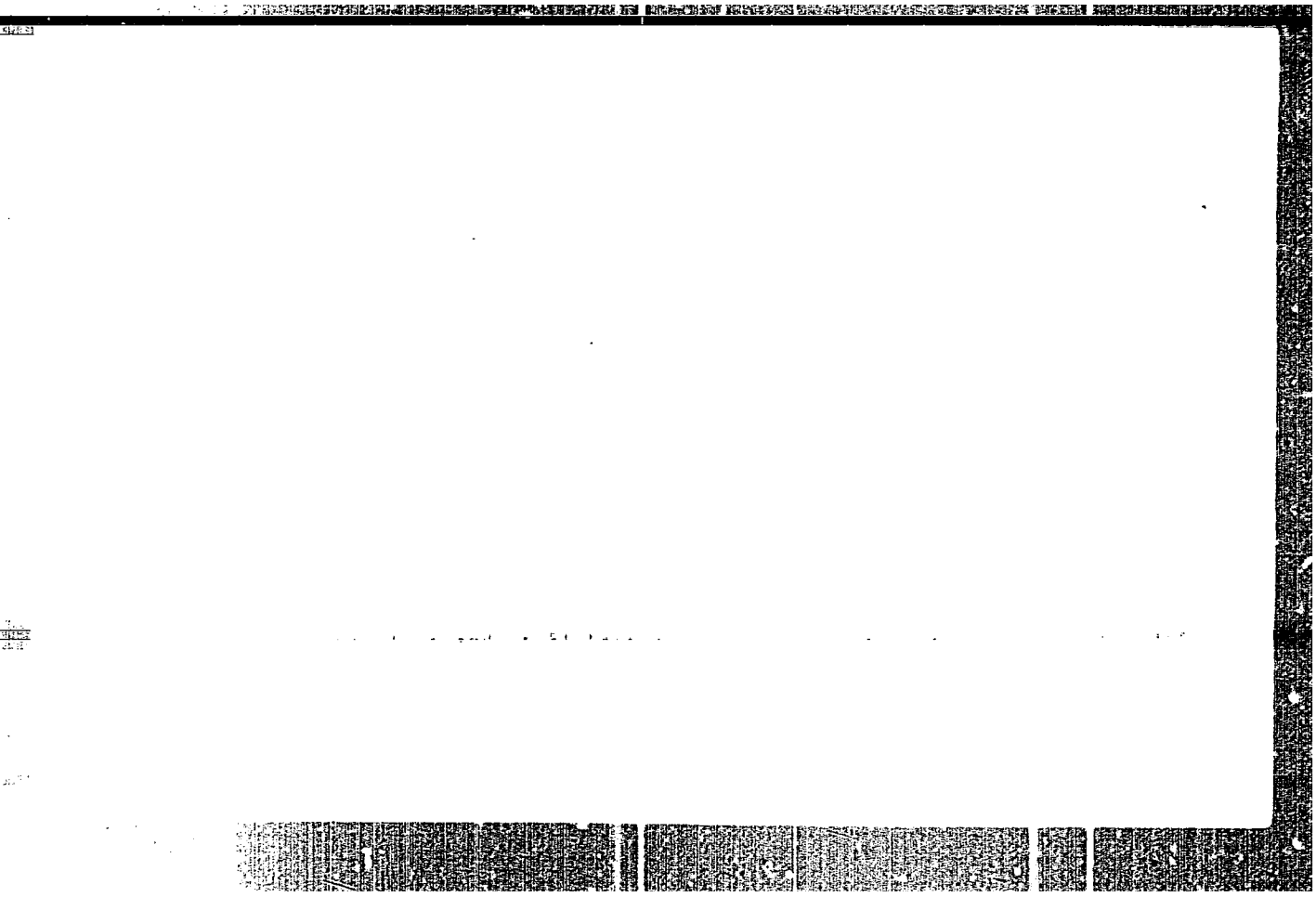
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



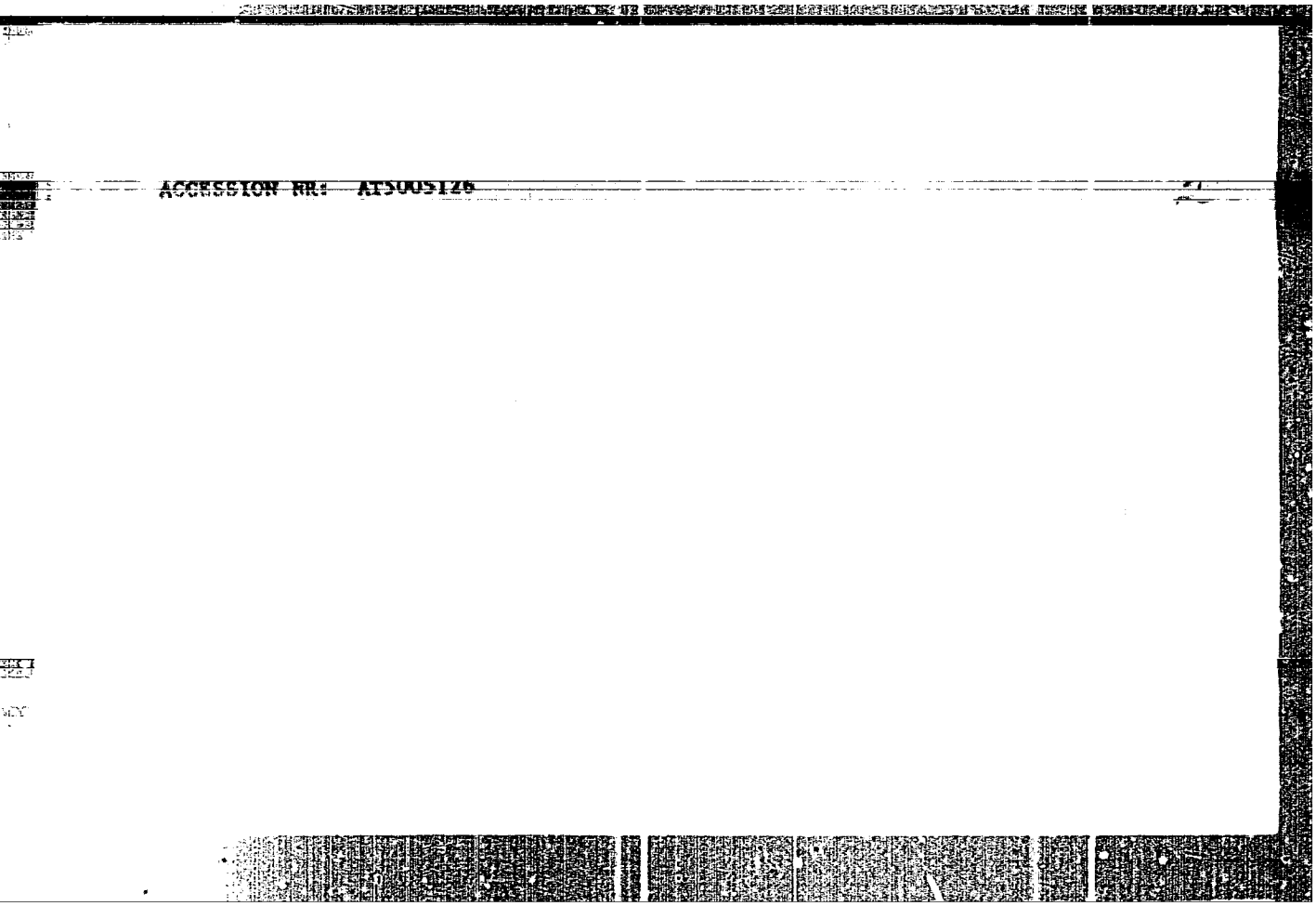
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



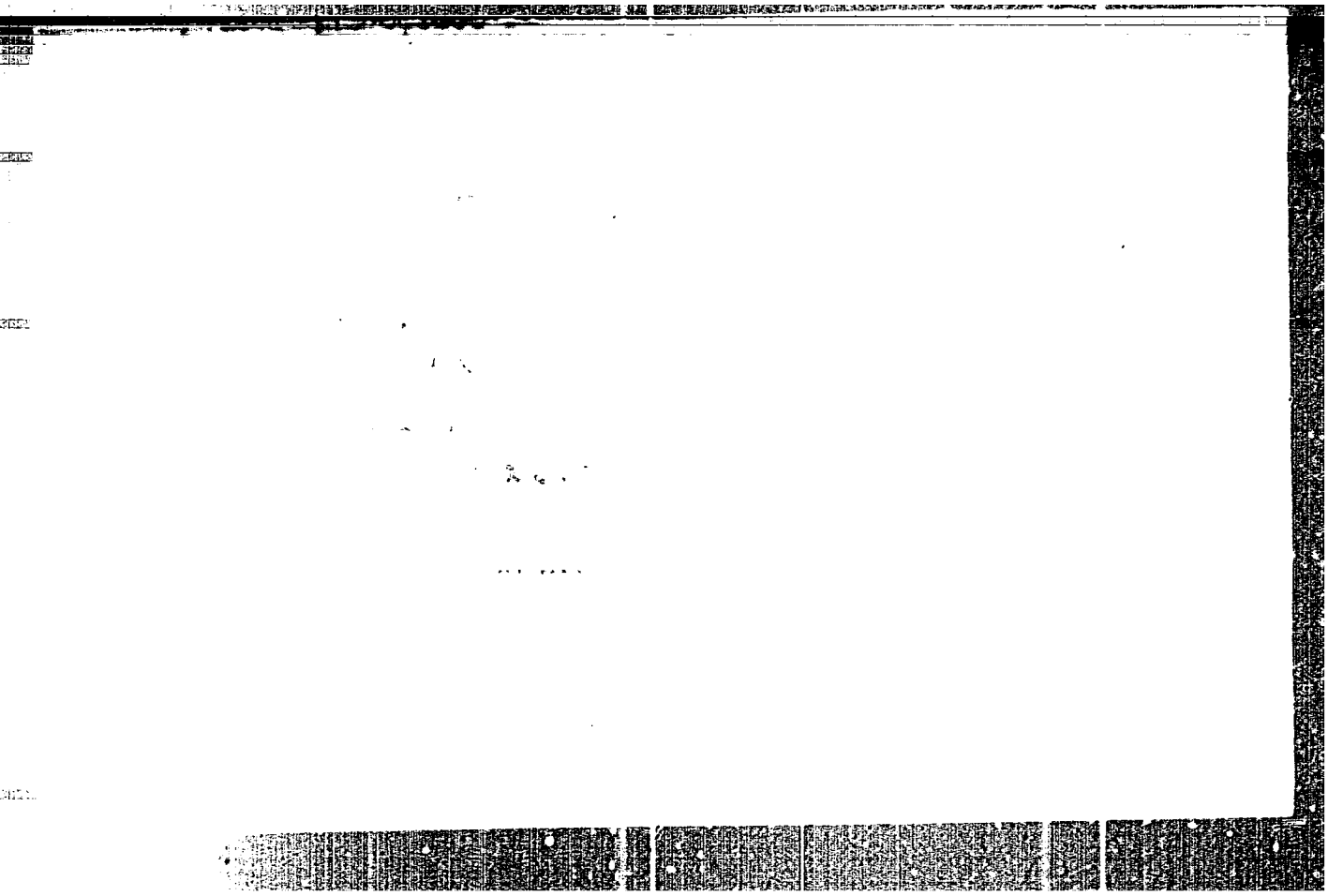
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



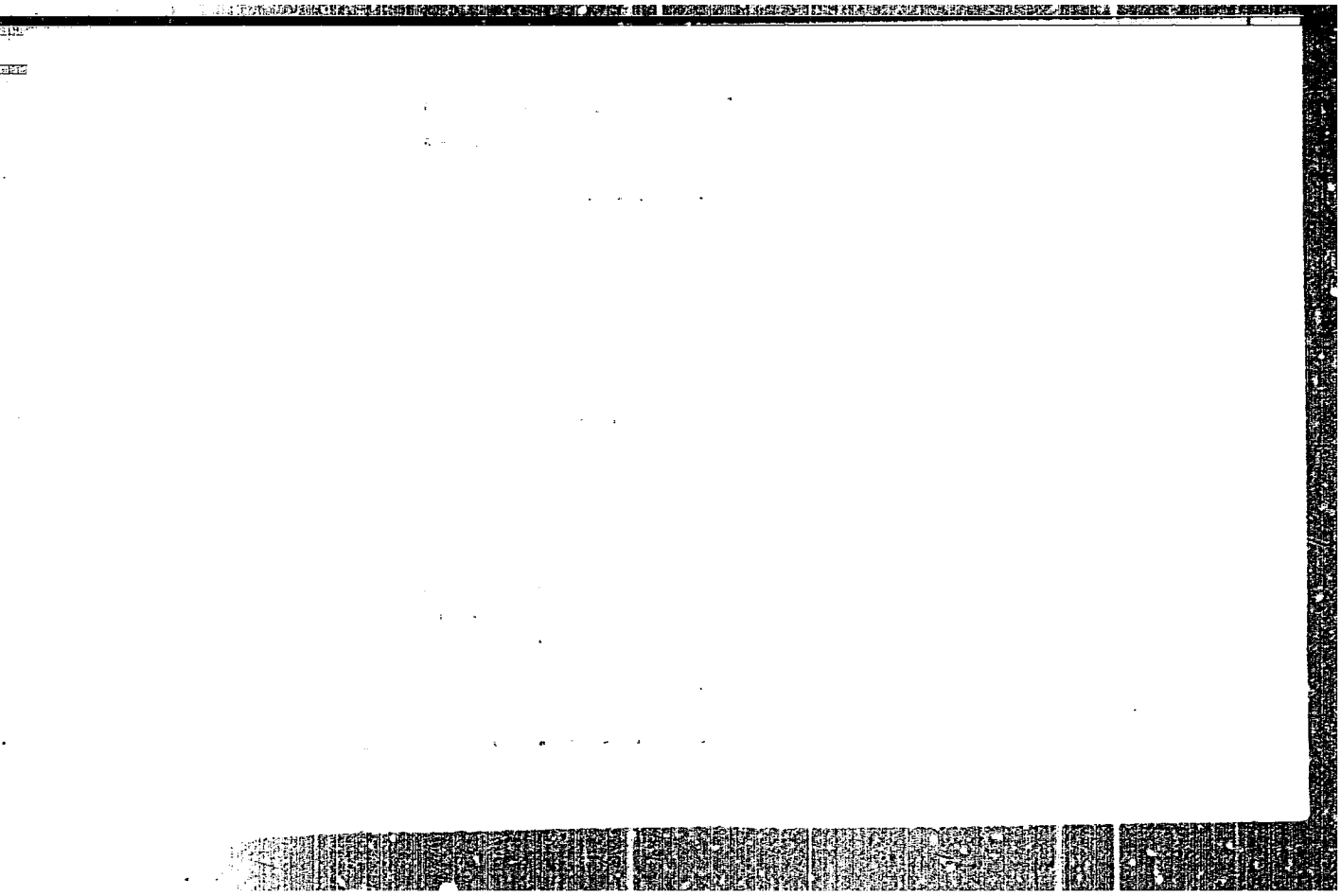
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



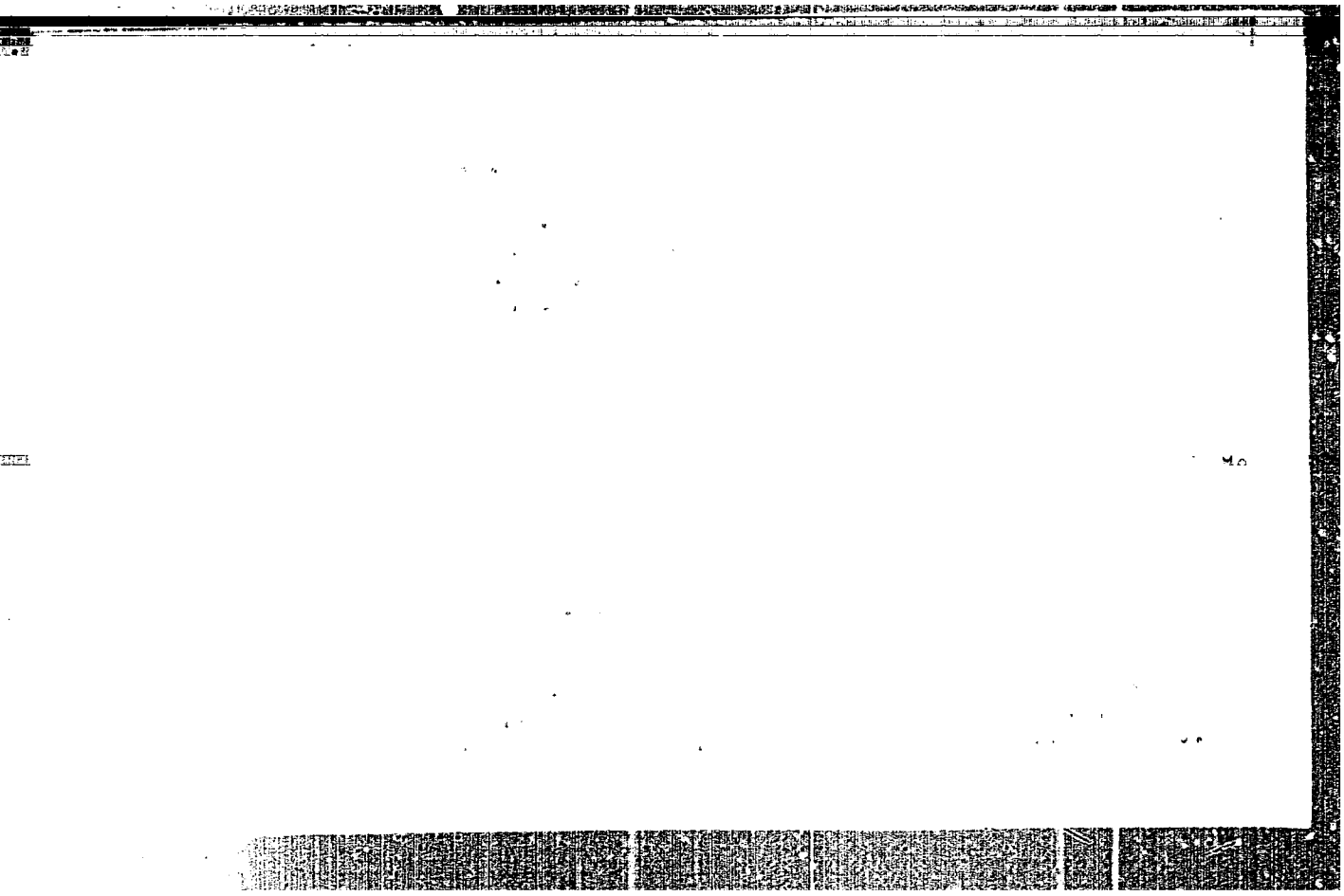
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



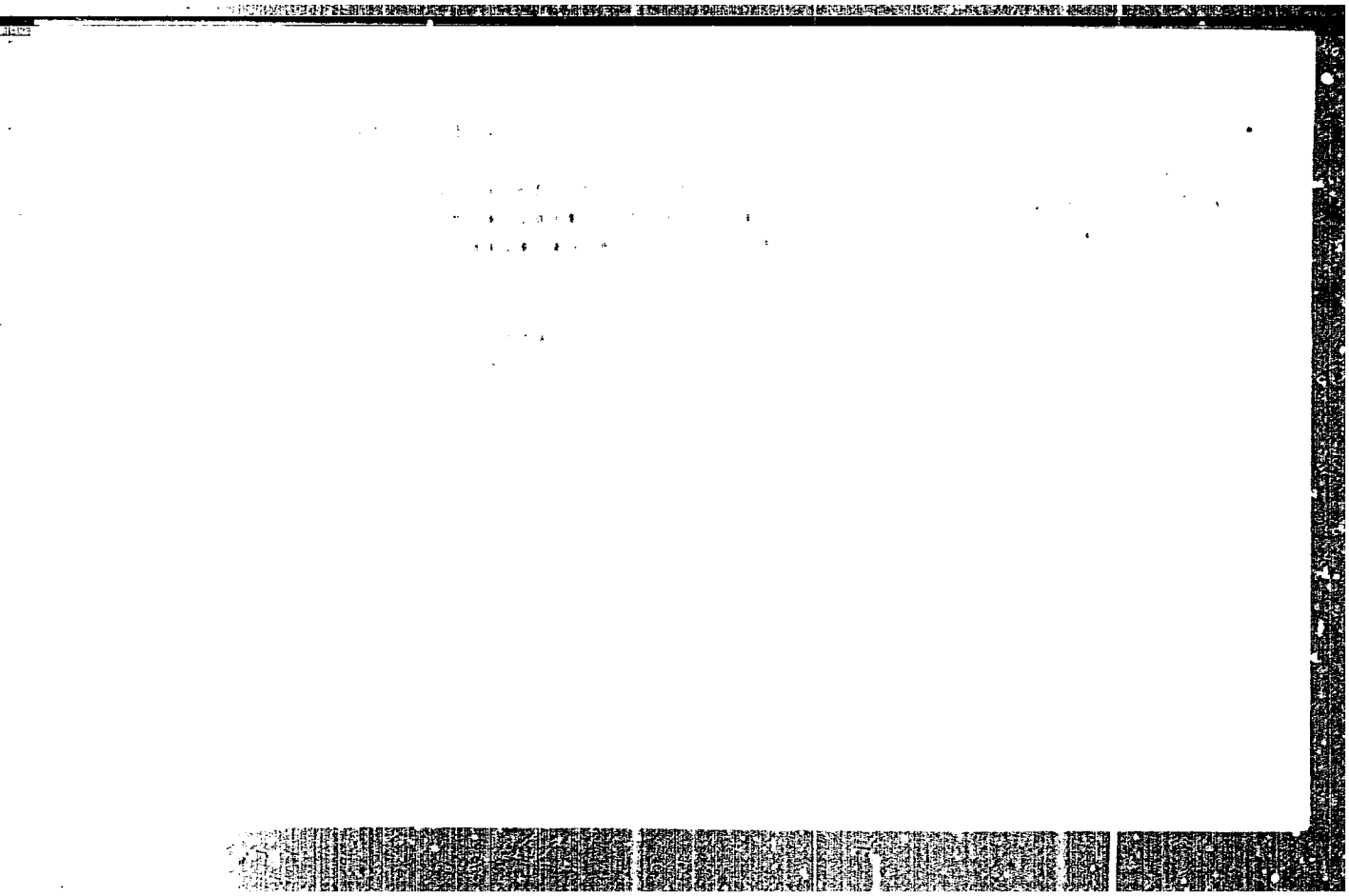
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



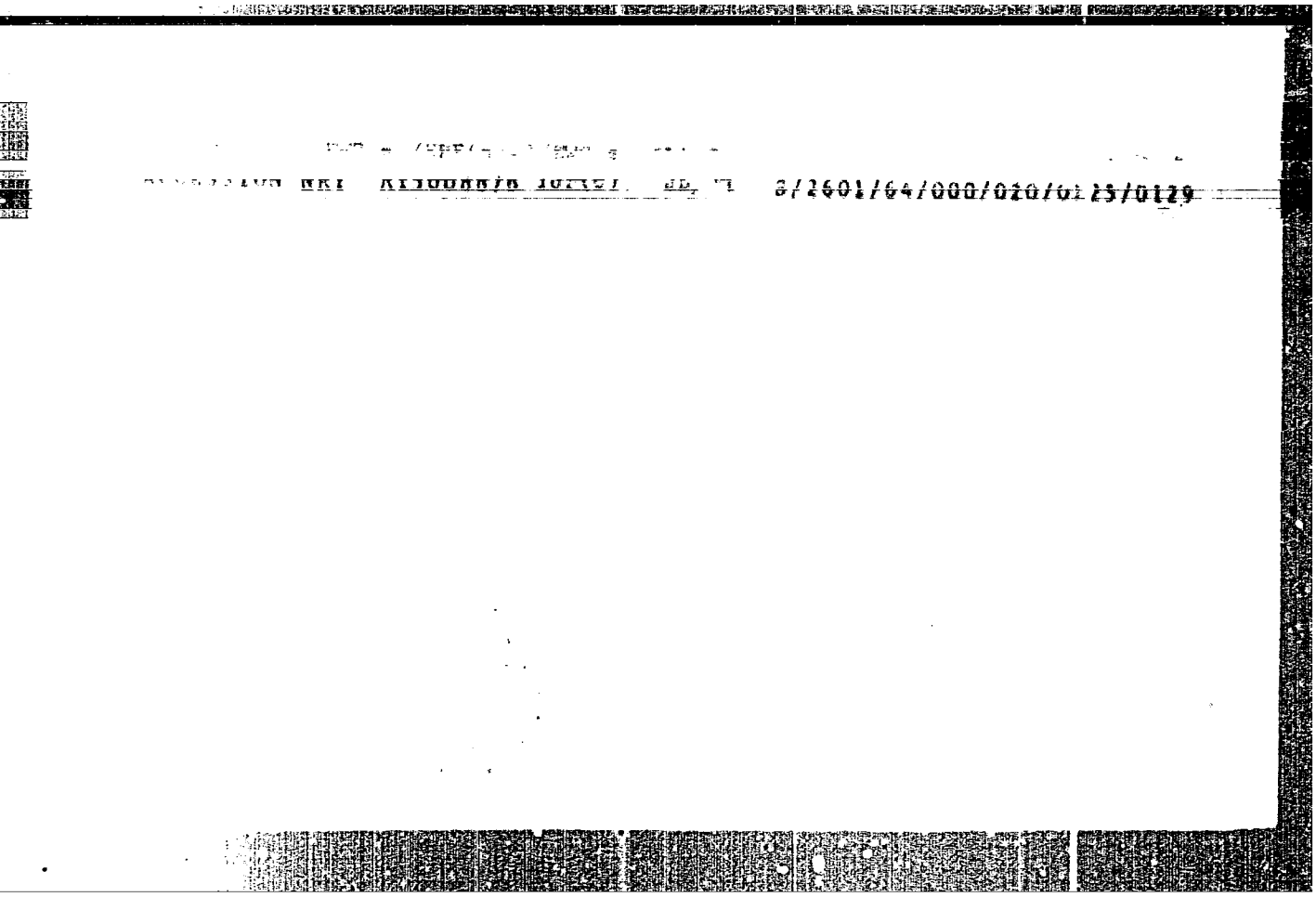
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



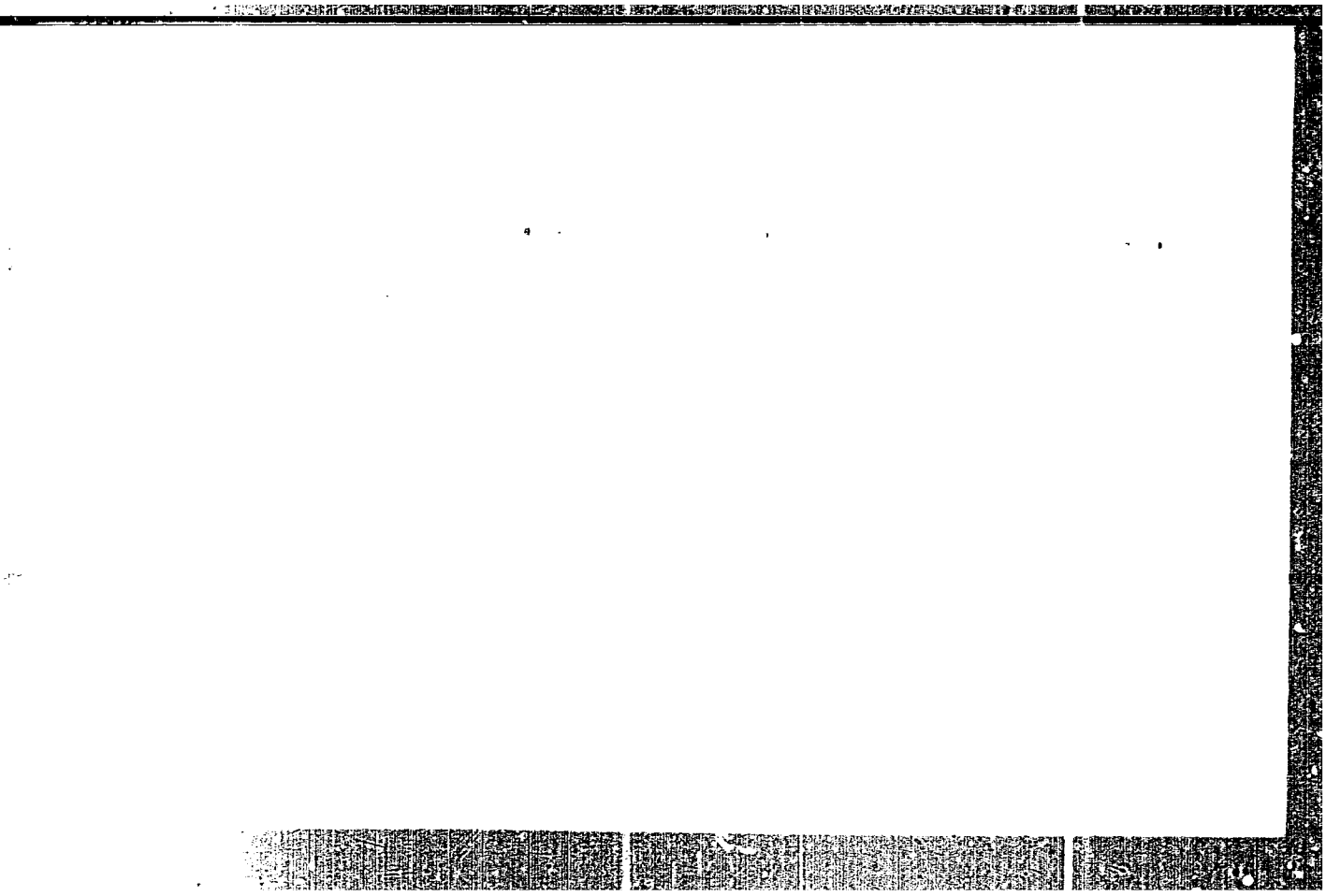
APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4



APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.; LATYSHEVA, V.I.

Constitutional diagrams of the systems $NbCr_2$ - $TiCr_2$ and $NbCr_2$ - Ti. Sbor.nauch.trud. Inst. metallofiz. AN URSR no.19:192-195 '64. (MIRA 18:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.; YUPKO, L.M.

Chromium - silicon diagram. Ukr.nauch.trud. Inst. metallofiz. AN URSR no.19:212-218 '64. (MIRA 18:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

SVECHNIKOV, V.N.; KOCHERZHINSKIY, Yu.A.; YUPKO, L.M.

Structure and properties of alloys in the system molybdenum - silicon - chromium. Sbor. nauch. trud. Inst. metallofiz. AN URSR no.20:94-107 '64. (MIRA 18:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERZHINSKIY, Yu.A.; LATYSHEVA, V.I.

Fusibility diagram of the system chromium - niobium - titanium.
Sbor. nauch. trud. Inst. metallofiz. AN URSR no.20:125-128 '64.
(MIRA 18:5)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

ACC NR: AT6036277 SOURCE CODE: UR/0000/66/000/000/0053/0055

AUTHOR: Svechnikov, V. N.; Kocherzhinskiy, Yu. A.; Yupko, L. M.

ORG: Institute of Physics of Metals, AN UkrSSR (Institut metallofiziki, AN UkrSSR)

TITLE: Phase diagram of the $CrSi_2$-$MoSi_2$ system

SOURCE: AN UkrSSR. Struktura metallicheskikh splavov (Structure of metal alloys). Kiev, Izd-vo Naukova dumka, 1966, 53-55

TOPIC TAGS: chromium ~~disilicide~~ alloy, molybdenum ~~disilicide~~ containing alloy, silicon, alloy phase diagram

ABSTRACT: A series of 43 chromium disilicide-molybdenum disilicide alloys have been investigated. The alloys were melted from sintered molybdenum, electrolytic chromium, and commercial or semiconducting silicon. Twenty-one of the alloys contained semiconducting silicon. On the basis of the data obtained by various methods of physicochemical analysis, a phase diagram of $CrSi_2$-$MoSi_2$ system was plotted (see Fig. 1). The diagram is of a peritectic type with peritectic tempera-

Card 1/2

ACC NR: AT6036277

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

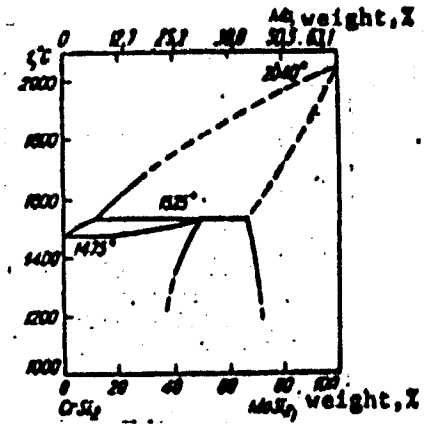


Fig. 1. Phase diagram of the $MoSi_2$-$CrSi_2$ system

ture of 1525 ± 25C. The existence of a double-phase region, between 40.5% and 70% of $MoSi_2$ has been confirmed. Orig. art. has: 3 figures.

SUB CODE: 07,11,20/ SUBM DATE: 22May65/ ORIG REF: 003/ OTH REF: 001/
ATD PRESS: 5106

Card 2/2

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHESHEV, N. P., Engr

USSR/Engineering - Construction, Materials 15 Mar 52

"Fabrication of Sectional Reinforced Concrete Constructions Using Granulated Blast Furnace Slags," N. P. Kocheshev, Engr

"Byul Stroitel Tekh" No 5, pp 24,25

Tagil construction Trust uses slag aggregate extensively in fabricating various reinforced concrete structural members, such as beams, columns, parts of sectional foundations, pipes, etc. Briefly describes technology of slag concrete which reaches required strength twice as fast as ordinary concrete.

213T57

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHESHKOV, A. A.

M. M. Kusakov and N. M. Lubman "Influence of Pressure on the Speed Rate of Capillary Saturation of Porous Formations"

Transactions of the Petroleum Institute, Acad. Sci. USSR, v. 11, Oil Field Industry, Moscow, Izd-vo AN SSSR, 1958. 346pp.

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHESHKOV, A.A.; KUSAKOV, M.M.; LUBMAN, N.M.

Mechanism of the capillary percolation and propulsion in porous media. Izv.vys.uchab.zav.; neft' i gaz 1 no.11: 59-64 '58. (MIRA 12:5)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akad.I.M.Gubkina.
(Capillarity)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHESHKOV, A.A.; KUSAKOV, M.M.; LUBMAN, N.M.

Effect of pressure on the speed of capillary percolation of polar liquids in porous media. Izv.vys.ucheb.zav.; neft' i gaz 1 no.12:69-76 '58. (MIRA 12:4)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akad.I.M.Gubkina.
(Capillarity)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KUSAKOV, M.M.; LUBMAN, H.M.; KOCHNESHKOV, A.A.

Effect of pressure on the speed of capillary impregnation of porous media. Trudy Inst.nefti 11:271-282 '58. (MIRA 11:12)
(Capillarity)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

KOCHERGHKOV, A. A., Candidate Tech Sci (diss) -- "Investigation of the effect of pressure on the capillary effects in forcing oil out of a porous medium". Moscow, 1959. 16 pp (Moscow Inst of the Petroleum-Chem and Gas Industry im Acad I. M. Gubkin), 150 copies (KL, No 23, 1959, 166)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

14(5)

AUTHOR: Kocheshkov, A. A.

SOV/152-59-2-15/32

TITLE: The Effect of Pressure Upon the Capillary Replacement by Water of Hydrocarbon Liquid From Porous Material (Vliyaniye davleniya na kapillyarnoye vytesneniye iz poristoy sredy uglevodorodnoy zhidkosti vodoy)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, 1959, Nr 2, pp 59 - 65 (USSR)

ABSTRACT: In the paper under review the effect of pressure upon the replacement by water of the hydrocarbon liquid (petroleum model) from porous medium under the influence of capillary forces was examined. The experimental part of the work was carried out in the Institut nefti AN SSSR (Petroleum Institute AS USSR). It was observed that during the capillary replacement of the petroleum solution by distilled water or by a solution of surface-active material DS, the increase of pressure in the water caused by methane accelerated the capillary replacement and increased the volume of the petroleum model replaced. This is due to a better moistening of the pore space with water in case of an increase in pressure and simultaneous decrease in the viscosity of the replaced liquid because of dissolving methane. The speed of capillary replace-

Card 1/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

The Effect of Pressure Upon the Capillary Replacement by Water of Hydrocarbon Liquid From Porous Material SOV/152-59-2-15/32

ment by water of petroleum solutions in a non-polar hydrocarbon liquid depends on the concentration of petroleum and decreases in with an increase of the latter. A similar dependence also remains with higher pressure. In the permeability range of from 150-500 "mdarsi", with any amount of pressure, the capillary forces favor a balance in the process of water-petroleum contact in heterogeneously porous material. Experiments with capillary replacement of the petroleum model have shown that an increase of pressure in the system emphasizes the role of the capillary forces. For this reason, the results obtained in the laboratory under atmospheric pressure can only be applied to practical use if they are corrected with consideration to the dependence of the processes on pressure. There are 4 figures, 3 tables, and 9 references, 8 of which are Soviet.

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akad. I. M. Gubkina (Moscow Institute of the Petroleum Chemical- and Gas Industries imeni Academician I. M. Gubkin)

SUBMITTED: November 24, 1958

Card 2/2

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

BOGOMOLOVA, A.F.; KOCHESHKOV, A.A.; KHYLOV, A.P.; KUSAKOV, M.M.

Experimental study of oil recovery in waterflood operations in the presence of free gas. Trudy VNII no.25:73-79 '59. (MIRA 15:4)

1. IGROI AN SSSR.

(Oil reservoir engineering)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

BOGOMOLOVA, A.F.; KOCHESHKOV, A.A.; KRYLOV, A.P.

Process of connate water displacement in flooding oil. Neft.khoz. 39 no.8:36-42 Ag '61. (MIRA 14:7)
(Oil field flooding)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"

"APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4

MIRZADZHANZADE, Asad Khalilovich, doktor tekhn. nauk; KOVALEV, Aleksandr Georgiyevich; DURMISHYAN, Ashot Grigor'yevich; KOCHESHKOV, Aleksandr Anatoliyevich; DUBROVINA, N.D., ved. red.; VORONOVA, V.V., tekhn. red.

[Theory and practice of the development of gas-condensate wells]Teoriia i praktika razrabotki gazokondensatnykh mestorozhdenii. Pod obshchei red. A.Kh.Mirzadzhanzade. Moskva, Gostoptekhizdat, 1962. 229 p. (MIRA 15:12)
(Condensate oil wells)

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723510009-4"